



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTEFERENCES**

Appellants: Chomik et al.  
Serial No.: 09/639,508  
Filed: August 16, 2000  
For: VENT DISK FOR BABY BOTTLE AND METHOD  
AND APPARATUS FOR MANUFACTURE THEREOF  
Examiner: Dexter, Clark F.  
Art Unit: 3724  
Customer Number: 27623  
Confirmation No.: 3194

Attorney Docket No.: 460.1891USV

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Dear Sir:

This Appeal Brief is filed under 35 U.S.C. § 134, and in accordance with the provisions of 37 C.F.R. § 1.192. The claims on appeal are set forth in Appendix A.

**I. INTRODUCTION/REAL PARTY IN INTEREST**

This appeal is made from the final Office Action (hereinafter "Final Action") mailed September 1, 2004. The owner of this application is Playtex Products, Inc.

**II. RELATED APPEALS AND INTERFERENCES**

No other appeals or interferences are known to Appellants, Appellants' Attorney or the owner/assignee of the application (Playtex Products, Inc.), which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS**

Claims 14 through 16 are subject to appeal. Claims 1 through 13 have been cancelled. Claims 17, 21 through 23 and 27 through 40 have been withdrawn.

Claims 14 through 16 were rejected in the Final Action under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,499,729 to Greenwood (hereinafter "Greenwood"), which is attached at Appendix B. Claims 18 through 20 and 24 through 26 were objected to as being dependent upon a rejected base claim, but allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### **IV. STATUS OF AMENDMENTS**

There were no amendments made in response to the Final Action. The arguments on appeal are based upon the pending claims as set forth in Appendix A.

#### **V. SUMMARY OF THE INVENTION**

Appellants' invention relates to a method of manufacturing vent discs that alleviates the vacuum created in containers, such as infant feeding bottles, during feeding. (p. 1, ll. 16-20).<sup>1</sup> This vacuum can make feeding more difficult and can cause a nipple to collapse, if so equipped. (p. 1, ll. 5-10).<sup>2</sup> The vent discs made according to Appellants' invention allow air to flow into the bottle during feeding to alleviate the vacuum, while preventing leakage out through the vent discs. (p. 2, ll. 1-14).

Generally, Appellants' invention provides a method of making or manufacturing vent discs 10 that efficiently allow air into the container to alleviate the vacuum and prevent leakage out of the bottle. (p. 2, ll. 1-14). The vent discs 10 are formed with a plurality of resealable perforations 18, 20 through an elastomeric, concavely curved domed portion 12 of the vent disc 10. (p. 6, ll. 4-8 and 16-18). This method comprises forming the plurality of perforations 18, 20 through the domed portion 12 such that each of the centerlines of the perforations 18, 20 are

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<sup>1</sup> (specification page(s), specification line(s))

<sup>2</sup> Cited from U.S. Patent No. 6,053,342 (col. 1, lines 14-22), which is commonly owned and incorporated by reference in this pending application. The '342 Patent is being attached at Appendix C.

coincident to a radius that forms the concave curvature of the domed portion 12. (p. 6, ll. 4-8 and 20-24).

Appellants' invention provides for forming the plurality of perforations 18, 20 with at least two different diameters through the domed portion 12. (p. 6, ll. 14-16; p. 7, ll. 32-33). FIGS. 2, 2A, 2B and 9, show one such example where the plurality of perforations 18, 20 are formed by an upwardly extending depression 20 in the undersurface of the domed portion 12 and another perforation 18 through the residual portion 24 above the depression 20. (p. 6, ll. 4-14; p. 7, l. 34; p. 8, ll. 1-4).

Appellants' invention also provides for forming the depressions 20 such that the centerlines of the depressions 20 are coincident with the radius that forms the concave curvature of the domed portion 12. (p. 6, ll. 20-22). In such an embodiment, the centerlines of the perforations 18 through the residual portions 24 are formed coincident to the corresponding centerlines of the depressions 20, as shown in Fig. 9. (p. 6, ll. 22-24).

The depressions 20 are preferably dish-shaped, recessed, upwardly concave, and circular or hemi-spherical in shape but can also be conical and cylindrical, among other shapes. (p. 6, ll. 14-16; p. 7, 32-33). The perforations 18 are resealable apertures, and preferably are elongated slits but could be pin holes. (p. 6, ll. 4-6; p. 10, ll. 4-7). If slits 18 are formed in the vent disc 10, the slits 18 preferably have a slit width W (as shown in FIG. 2B) between about 0.040 to about 0.080 inches, more preferably from about 0.058 inches to about 0.062 inches, and most preferably about 0.060 inches. (p. 7, ll. 6-10).

Shown in FIGS. 3 through 4 and 5 through 8 are two non-limiting examples of piercing assemblies 50, 500 that can form the vent discs 10 as described above. (p. 9, ll. 32-33; p. 10, ll. 18-21; p. 12, ll. 17-19). Assembly 50 has piercing elements 30 with central axes that coincide with the radius that forms the concave curvature of the domed portion 12. (p. 10, ll. 25-29; p. 11, ll. 23-20). Assembly 500 uses a vacuum to flatten the domed portion 12 and then pierces the vent disc 10 with piercing elements 30 that are mounted axially, vertically and parallel to each other on the punch mounting plate 120 so that when the vent disc returns to its dome shaped curvature, the perforations coincide with the radius that forms the concave curvature of the domed portion. (p. 14, ll. 3-5 and 19-23; p. 15, ll. 12-16).

## **VI. ISSUE**

Whether claims 14 through 16 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,499,729 to Greenwood (hereinafter “Greenwood”)?

## **VII. GROUPING OF CLAIMS**

Claims 14 through 16 form a group that stand or fall together.

**VIII. ARGUMENT****(i) Rejections under 35 U.S.C. §112, first paragraph**

The Final Action does not reject any of the claims under 35 U.S.C. §112, first paragraph.

**(ii) Rejections under 35 U.S.C. §112, second paragraph**

The Final Action does not reject any of the claims under 35 U.S.C. §112, second paragraph.

**(iii) Rejections under 35 U.S.C. §102****(a) Rejection of claims 14 through 16 as anticipated by Greenwood**

The Final Action rejects claims 14 through 16 under 35 U.S.C. §102 as being “clearly anticipated” by Greenwood. (Final Action p. 2). For the reasons set forth below, Greenwood fails to disclose or suggest the features of claims 14 and 15 of “forming said plurality of apertures with each of said centerlines coincident to a radius that forms a concave curvature of said domed portion.” Greenwood further fails to disclose or suggest the features of claim 16 of

forming a plurality of upwardly extending depressions with each having a centerline and the centerlines of the depressions being coincident with a radius that forms a concave curvature of the domed portion, and forming a plurality of perforations through the residual with each having a centerline and the centerlines of the plurality of perforations being formed coincident to the centerlines of the plurality of depressions.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).<sup>3</sup> “Under 35 U.S.C. Section 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim.” Gechter v. Davidson, 116 F.3d 1454, 1457, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997). “The identical invention must be shown in as complete detail as is contained in the ... claim.” Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The rejection of claims 14 through 16 in the Final Action is based upon the embodiment of FIGS. 14 through 18, and, in particular, FIG. 17 of Greenwood.<sup>4</sup> The Greenwood specification describes this embodiment as follows:

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<sup>3</sup> Case law relied upon is being attached at Appendix D.

<sup>4</sup> The Final Action does not explicitly state that the rejection is based upon the embodiment of FIGS. 14 through 18 in Greenwood. (Final Action p. 2). However, in an earlier Office Action mailed May 13, 2002 and during an Examiner Interview regarding the Final Action, the contents of the discussion of which are memorialized in Appellants' Amendment of December 15, 2003, the Examiner's final rejection was premised upon the embodiment shown in FIGS. 14 through 18 of Greenwood, and particularly FIG. 17. (Amendment of December 15, 2003, pp. 8-9; Office Action of May 13, 2002, p. 6).

Bottle structure 71 employs an elastic apertured diaphragm 72 in which the individual apertures 73 are illustratively arranged in a square array. Each aperture 73 is a point in configuration when diaphragm 72 is relaxed. Circumferentially about the axis of each aperture 73 a dish-like (preferably hemispherical) recess 74 is located on the concave surface 76 of the domed region 77 of the diaphragm 72. (Greenwood col. 8, lines 37-44).

Applicants previously made of record a geometric dissection of FIG. 17 of Greenwood which included the radius of curvature of the Greenwood vent disc, and which is included in Appendix E. The geometric dissection shows that the centerline of aperture 73 is not coincident to the radius that forms the concave curvature of the domed portion. The geometric dissection is based upon the specification of Greenwood, which makes clear that domed region 77 is a “segment of a spherical curvature.” (Greenwood col. 8, lines 45-52). As such, Applicants’ Attorney previously drew the radius of curvature for the spherical segment using a compass according to geometric principles.<sup>5</sup> The drawing was enlarged to make the difference in angle between the radius of curvature and the centerline abundantly clear.

The Final Action asserts that Hockerson-Halberstadt Inc. v. Avia Group Int’l, Inc., 55 USPQ2d 1487, 1491 (Fed. Cir. 2000) precludes reliance upon the angular difference between the radius of curvature and the centerline in FIG. 17 as shown in the drawing of Appendix D. (Final Action pp. 2-3). Instead, the Final Action asserts that “aperture 73 appears to extend from the apex of recess 74, and appears to extend to the outer surface of diaphragm 72, and appears to

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<sup>5</sup> The Greenwood specification describes the domed shape segment 77 of FIG. 17 as having “an outside diameter of 1.87 inches (about 4.75 centimeters) and an inside diameter of about 1.75 inches (about 4.44 centimeters)” and “a transverse thickness of about 0.06 inch (about 0.15 centimeter).” (Greenwood col. 8, lines 45-66).



intersect that surface at an angle of about 90 degrees to a tangent of the surface at the point of intersection.”<sup>6</sup> (Final Action p. 3).

However, this same body of case law cited by the Final Action cautions that while “[p]atent drawings are not working drawings”, “[the Court] did not mean that things patent drawings show clearly are to be disregarded.” In re Mraz, 173 USPQ 25, 27 (CCPA 1972)(emphasis in original). “[A] person skilled in the art would suspect there was some reason for the relationships shown in the drawing and would not regard such disclosure as accidental or arbitrary.” In re Reynolds, 170 USPQ 94, 98 (CCPA 1971).

Applicants’ geometric dissection of FIG. 17 is not a measurement and is not done to determine a dimension such as “the respective widths of the groove and fins [of the footwear]” as in Hockerson-Halberstadt Inc. v. Avia Group Int’l, Inc., but rather is to show the geometric relationship between the centerline of aperture 73 and the radius of curvature of spherical diaphragm segment 72, which is non-coincidental.<sup>7</sup> Hockerson-Halberstadt Inc. at 1491. Such geometric relationships, e.g., surfaces that are parallel or surfaces that are converging/diverging, are commonly relied upon and cannot be ignored. For instance, in In re Reynolds, 170 USPQ 94, 97-98 (CCPA 1971), the Court relied upon the applicant’s exhibit, as filed in support of his argument during prosecution, which showed the structure of a variable capacitor as depicted in

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<sup>6</sup> In an earlier Office Action of May 13, 2002, it was asserted by the Examiner that “applicant’s Exhibit I [] cannot be relied on to prove that the perforation and the radius shown are not parallel or colinear” and that “it is the general teachings disclosed by the drawings and specification that must be considered.” (Office Action of May 13, 2002, p. 6).

<sup>7</sup> The Hockerson Court stated: “it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.” Hockerson-Halberstadt Inc. at 1491.

the application drawing but in three different positions which were not depicted in the application drawings. Id. The three different positions showed the structure as it moved in accordance with the functioning of the capacitor. Id. The Court stated: “[w]e think it clear that there is no substantial variance between the structure of Fig. 2 [included in the application] and of exhibit I [as drawn by the applicant during prosecution], as far as the size, configuration and spacing of plate 24, shaft 17, plate 26, and tab 26’ are concerned.” In re Reynolds at 98.

Although the specification was admittedly silent as to this particular function of the capacitor, the Reynolds Court determined that the geometric relationship supported the applicant’s position and reversed the Examiner’s rejection. In re Reynolds at 97-98.

To disregard the geometric relationship shown in FIG. 17 of Greenwood as the Examiner has done, which shows the centerline of aperture 73 being non-coincidental with the radius of curvature of diaphragm 72, ignores this body of case law. Indeed, in In re Heinrich, 122 USPQ 388, 390 (CCPA 1959), the Court agreed with the determination of the Board of Appeals that a non-scaled drawing of a combination sealing and mounting ring can be relied upon to disclose a taper angle of less than  $7\frac{1}{2}^{\circ}$ , even where the taper shown in the drawings is merely “a very small angle” and where the specification is silent as to the angle of taper. Id.

Moreover, the Greenwood specification supports the fact that FIG. 17 shows the centerline of aperture 73 being non-coincidental with the radius of curvature of diaphragm 72. In describing the method of making the diaphragm 72, Greenwood states:

Each aperture 73 is formed by straight pin puncture through the diaphragm 72 **in the apex region** of each hemispherical recess 74. The pin used (not shown) has a circular cross-section. (Greenwood col. 8, lines 57-60) (emphasis added).

The straight pin puncture 73 is “in the apex region”, as opposed to being through the apex or highest point of the recess 74.<sup>8</sup> The Webster’s Dictionary defines a “region” as an indefinite area.<sup>9</sup> As such, it is completely consistent with this Greenwood methodology and description that FIG. 17 shows the centerline of aperture 73 being non-coincidental with the radius of curvature of diaphragm 72. Indeed, Greenwood is describing that the aperture 73 only punctures the indefinite or general apex area of recess 74 rather than passing directly through the apex of the recess and thus forming the plurality of apertures with each of the centerlines coincident to a radius that forms a concave curvature of the domed portion, as recited by claims 14 and 15 or forming a plurality of upwardly extending depressions with each having a centerline and the centerlines of the depressions being coincident with a radius that forms a concave curvature of the domed portion, and forming a plurality of perforations through the residual with each having a centerline and the centerlines of the plurality of perforations being formed coincident to the centerlines of the plurality of depressions, as recited in claim 16.

Assuming, arguendo, that the Examiner is permitted to ignore what is actually shown in FIG. 17 of Greenwood and is further permitted to ignore the specification of Greenwood, as described above, in order to erroneously interpret the single slit 73 as having a centerline coincident to the radius that forms the concave curvature of the domed portion of the vent disc,

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<sup>8</sup> An apex is defined as “the highest point.” Webster’s II New College Dictionary 2001.

<sup>9</sup> Webster’s II New College Dictionary 2001.

Greenwood still fails to disclose or suggest the features of claims 14 through 16. Claims 14 and 15 recite that **each** of the centerlines of the plurality of apertures are coincident to the radius of curvature of the domed portion. Claim 16 recites that the centerlines of the depressions are coincident with a radius that forms a concave curvature of the domed portion and the centerlines of the plurality of perforations are formed coincident to the centerlines of the plurality of depressions. Although not asserted in the Final Action, in the Office Action of May 13, 2002, the Examiner concluded that “Figure 17 shows a cross section of one of the apertures, wherein a reasonable interpretation is that all of the apertures are the same as that shown in Figure 17.” (Office Action of May 13, 2002, p. 7). However, the Examiner’s conclusion ignores the Greenwood specification, which describes the puncture as merely in the apex region of the recess rather than through the apex of the recess, and more significantly ignores the methodology described in the specification and actually employed by Mr. Greenwood.<sup>10</sup>

The Greenwood specification describes making the apertures 73 with a puncture from a “pin” through the spherically shaped or curved diaphragm, as opposed to using a structured, precise method such as a plurality of fixed pins. (Greenwood col. 8, lines 57-60). Additionally, as described in the Declaration of Mr. Manganiello (present Applicant), Mr. Greenwood disclosed to the assignee of the pending application that “the puncture holes were made one at a time by hand using a push pin”, which is consistent with the description provided in the Greenwood specification.<sup>11</sup> (Manganiello p. 2, par. 11). Mr. Greenwood supplied the assignee of the pending application with approximately 1,000 of the vent discs as described in the

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<sup>10</sup> The Greenwood specification describes FIG. 17 as “an enlarged fragmentary vertical sectional view taken through a single diaphragm aperture in the diaphragm of FIG. 15.” (Greenwood col. 3, lines 21-23).

<sup>11</sup> The Declaration of Mr. Manganiello was previously made of record and is also being attached at Appendix F.

embodiment of FIGS. 14 through 18 of the Greenwood patent. (Manganiello p. 2, par. 11). Further testing of the Greenwood type of vent discs by the assignee of the pending application, indicated that these puncture holes were “random in terms of point of entry, angle and contact/seal surface area”, as described in the Declaration of Mr. Chomik (present Applicant).<sup>12</sup> (Chomik p. 3, par. 15). This determination is consistent with the description provided in the Greenwood specification in which the pin puncture is merely “in the apex region.” (Greenwood col.8, lines 57-60).

The Final Action concludes that “whether the apertures are formed by hand or by an apparatus appears to be irrelevant with respect to the location and orientation of the apertures.” (Final Action p. 3). However, one of ordinary skill in the art using a single pin to puncture an aperture “in the apex region” would be unable to make the punctures at the correct position within each and every one of the depressions, and would also be unable to make the punctures at the correct angle within each and every one of the depressions, to ensure that each of the centerlines was coincident with the radius of curvature, as Mr. Greenwood was unable to do. Even more significantly, there was absolutely no motivation for Mr. Greenwood, or any one else of ordinary skill in the art at that time, to try to make the punctures at the correct position within each of the depressions and also at the correct angle to ensure that each of the centerlines was coincident with the radius of curvature, as recited by claims 14 and 15, or to ensure that the centerlines of the depressions were coincident with the radius that forms the concave curvature of the domed portion and the centerlines of the plurality of perforations were formed coincident to the centerlines of the plurality of depressions, as recited in claim 16. The Greenwood patent

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<sup>12</sup> The Declaration of Mr. Chomik was previously made of record and is also being attached at Appendix G.

describes that this was not the intent since the specification states that it is merely trying to puncture “in the apex region.” (Greenwood col. 8, lines 57-60).

It was found that the Greenwood type of vent discs with the random punctured angles sometimes leaked due to the puncture holes. (Manganiello p. 4, par. 19). Appellants’ invention, as recited in claims 14 through 16, was devised by the Applicants in response to this leakage. (Chomik pp. 4-5, pars. 17-18). Additional comparative testing indicated that “improved, optimum air venting and no leakage occurred” with the vent discs having perforations coincident to the radius of curvature as in Applicants’ invention, as compared to the Greenwood vent discs. (Chomik p. 6, pars. 19-21).

Neither the Greenwood patent, Mr. Greenwood’s actual vent discs, or one of ordinary skill in the art, (notwithstanding that the Final Action rejected claims 14 through 16 under 35 U.S.C. §102 and not under 35 U.S.C. §103) was or would have made vent discs as described in claims 14 and 15, with each of the centerlines being coincident to a radius that forms a concave curvature of the domed portion, or as described in claim 16 with the centerlines of the depressions being coincident with the radius that forms the concave curvature of the domed portion and the centerlines of the plurality of perforations being formed coincident to the centerlines of the plurality of depressions.

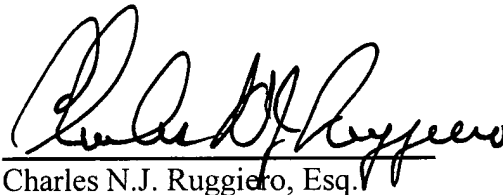
**(iv) Rejections under 35 U.S.C. §103**

The Final Action does not reject any of the claims under 35 U.S.C. §103.

**IX. CONCLUSION**

In summary, Applicants respectfully request that the Board of Appeals reverses the final rejection of claims 14 through 16, and the objections to claims 18 through 20 and 24 through 26.

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**APPENDIX A**



14. A method of forming a plurality of apertures in a concavely curved domed portion of a vent disc, said plurality of apertures each having centerlines, which comprises:

forming said plurality of apertures with each of said centerlines coincident to a radius that forms a concave curvature of said domed portion, wherein said plurality of apertures have at least two different diameters through said domed portion, wherein said plurality of apertures are resealable, and wherein said domed portion is elastomeric.

15. The method of claim 14, further comprising forming a portion of each of said plurality of apertures with a hemispherical shape.

16. A method of forming a plurality of perforations in a concavely curved domed portion of a vent disc, which comprises:

forming a plurality of upwardly extending depressions in an undersurface of said domed portion while leaving a residual of said domed portion above said plurality of depressions, said plurality of depressions each having a centerline, each of said centerlines being coincident with a radius that forms a concave curvature of said domed portion; and

forming a plurality of perforations through said residual, said plurality of perforations being resealable and each having a centerline, each of said centerlines of said plurality of perforations being formed coincident to a corresponding centerline of one of said plurality of depressions, wherein said domed portion is elastomeric.

**APPENDIX B**



US005499729A

**United States Patent** [19]**Greenwood et al.**[11] **Patent Number:** **5,499,729**[45] **Date of Patent:** **Mar. 19, 1996**[54] **INFANT FEEDING BOTTLE INCLUDING  
PRESSURE EQUALIZING DIAPHRAGM**[75] Inventors: **Mark H. Greenwood**, Arlington Heights; **Marvin Keith**, Evanston, both of Ill.[73] Assignee: **Children On the Go, Inc.**, Wheeling, Ill.[21] Appl. No.: **214,614**[22] Filed: **Mar. 15, 1994**[51] Int. Cl.<sup>6</sup> ..... **A61J 9/04**[52] U.S. Cl. .... **215/11.5; 137/845; 215/261; 215/271**[58] Field of Search ..... **215/11.1, 11.2, 215/11.3, 11.4, 11.5, 261, 260, 271; 220/89.1, 373, DIG. 27, 209; 222/875, 490; 137/845, 859****References Cited****U.S. PATENT DOCUMENTS**

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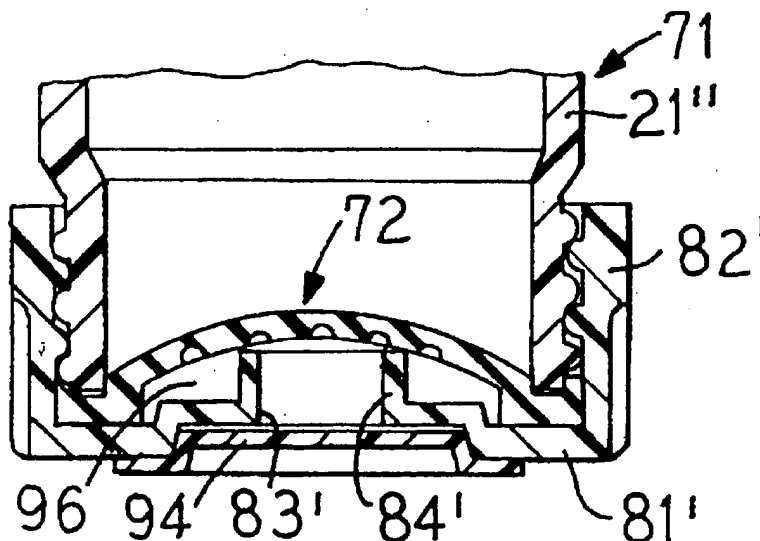
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*Primary Examiner*—Allan N. Shoap*Assistant Examiner*—Christopher J. McDonald*Attorney, Agent, or Firm*—Olson & Hierl, Ltd.[57] **ABSTRACT**

An infant feeding bottle that is nipple-equipped at one end that is further equipped with a pressure equalizing apertured diaphragm member at the opposite end. The diaphragm member allows room air to pass therethrough into the air space in the bottle when the bottle is inclined and liquid is withdrawn through the nipple, thereby equalizing the interior air pressure. The diaphragm member is gas and liquid tight when the inside and outside pressures are equal and the bottle is in an upright configuration with the feeding liquid resting on the diaphragm member. The diaphragm member has a central portion which is dome configured and provided with apertures that are in a sealed shut configuration when the diaphragm member is relaxed yet that are opened when the diaphragm member is expanded responsive to differential air pressure.

**18 Claims, 3 Drawing Sheets**

**APPENDIX C**



US006053342A

**United States Patent** [19][11] **Patent Number:** **6,053,342****Chomik**[45] **Date of Patent:** **Apr. 25, 2000**[54] **INFANT FEEDING BOTTLE WITH  
PRESSURE EQUALIZING DIAPHRAGM**[75] **Inventor:** **Richard Chomik, Garwood, N.J.**[73] **Assignee:** **Playtex Products, Inc., Westport,  
Conn.**[21] **Appl. No.:** **08/923,372**[22] **Filed:** **Sep. 3, 1997**[51] **Int. Cl.<sup>7</sup>** ..... **A61J 9/00; A61J 9/04**[52] **U.S. Cl.** ..... **215/11.5; 215/11.1; 220/DIG. 27**[58] **Field of Search** ..... **215/11.1, 11.4,  
215/11.5; 220/DIG. 27**[56] **References Cited****U.S. PATENT DOCUMENTS**

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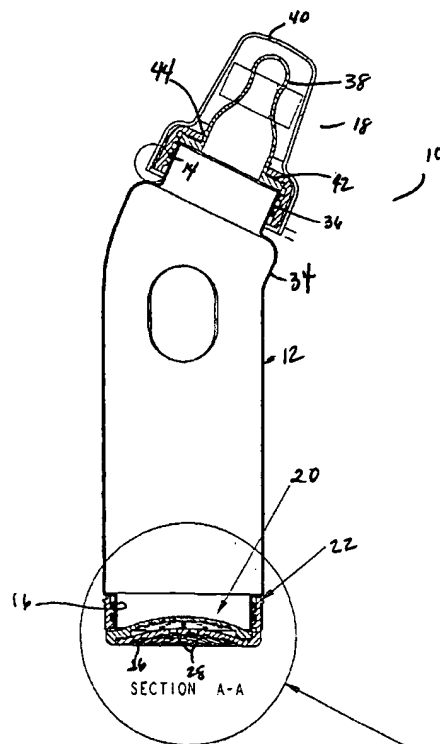
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5,607,074	3/1997	De Gennaro .....	215/11.5

**FOREIGN PATENT DOCUMENTS**

1058610	3/1954	France .....	215/11.5
2190596	11/1987	United Kingdom .....	215/11.5
2238729	6/1991	United Kingdom .....	215/11.5
9007320	7/1990	WIPO .....	215/11.5

**Primary Examiner**—Sue A. Weaver**Attorney, Agent, or Firm**—Ohlandt, Greeley, Ruggiero &  
Perle, LLP[57] **ABSTRACT**

A bottle assembly includes a bottle having a first open end and a second open end, a nipple assembly affixed to the first open end, a vented cap affixed to the second open end, and an elastomeric diaphragm affixed to the second open end by the vented cap. The vented cap has at least one slot. The elastomeric diaphragm has a plurality of resealable perforations and at least one integral tab extending therefrom. The integral tab is adapted to be inserted into and seal the slot.

**29 Claims, 5 Drawing Sheets**

**APPENDIX D**

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(1983), or a written justification for contracting on a noncompetitive basis, 41 C.F.R. § 3-3.5301 (1983). Moreover, the numerous form clauses required by federal procurement regulations would have no applicability to this type of collaborative research effort. *See, e.g.*, 41 C.F.R. §§ 1-1.381-7, 1-7 (1983). Confirmatory of this is the fact that HHS itself has used a form similar to Pasteur's September 23, 1983 agreement when sending cell lines to other laboratories.

[1] For the foregoing reasons, we are persuaded that the primary function of the pleaded contracts was facilitation of the transfer of research materials among scientists engaged in a collaborative research effort, not procurement of property or services, and that they, therefore, do not fit within the scope of the Contract Disputes Act. Accordingly, we reverse the judgment of the Claims Court and remand the case for consideration of whether there is a valid and enforceable contract, and, if so, whether it has been breached.

#### REVERSED AND REMANDED

#### Court of Appeals, Federal Circuit

Verdegaal Brothers Inc. v. Union Oil Company of California

No. 86-1258

Decided March 12, 1987

#### PATENTS

##### 1. Patentability/Validity — Anticipation — Prior art (§115.0703)

Federal district court erred in denying patent infringement defendant's motion for judgment n.o.v., in view of evidence demonstrating that claims for making urea-sulfuric acid fertilizer, including claims that reaction be conducted in "heat sink" of recycled fertilizer to prevent high temperature buildup, were anticipated by prior art patent that specifically detailed process for making such urea-sulfuric acid products and that explicitly taught that base or "heel" of recycled fertilizer can be used to make more of product, even if patentee of prior art did not recognize that heel functioned as heat sink, since heat sink property was inherently possessed by heel.

##### Particular patents — Fertilizers

4,310,343, Verdegaal and Verdegaal, Process for Making Liquid Fertilizer, holding of validity and infringement reversed.

Appeal from District Court for the Eastern District of California, Coyle, J.

Action by Verdegaal Brothers Inc., William Verdegaal, and George Verdegaal, against Union Oil Company of California, and Brea Agricultural Services Inc., for patent infringement. From decision denying defendants' motion for judgment notwithstanding the verdict, defendants appeal. Reversed.

Andrew J. Belansky of Christie, Parker & Hale (David A. Dillard, with him on the brief), all of Pasadena, Calif., for appellants.

John P. Sutton of Limbach, Limbach & Sutton (Michael E. Dergosits, with him on the brief), all of San Francisco, Calif., for appellees.

Before Markey, Chief Judge, and Davis and Nies, Circuit Judges.

Nies, Circuit Judge.

Union Oil Company of California and Brea Agricultural Services, Inc. (collectively Union Oil) appeal from a judgment of the United States District Court for the Eastern District of California, No. CV-F-83-68 REC, entered on a jury verdict which declared U.S. Patent No. 4,310,343 ('343), owned by Verdegaal Brothers, Inc., "valid" and claims 1, 2, and 4 thereof infringed by Union Oil. Union Oil's motion for judgment notwithstanding the verdict (JNOV) was denied. We reverse.

#### I BACKGROUND *The General Technology*

The patent in suit relates to a process for making certain known urea-sulfuric acid liquid fertilizer products. These products are made by reacting water, urea (a nitrogen-containing chemical), and sulfuric acid (a sulfur-containing chemical) in particular proportions. The nomenclature commonly used by the fertilizer industry refers to these fertilizer products numerically according to the percentages by weight of four fertilizer constituents in the following order: nitrogen, phosphorous, potassium, and sulfur. Thus, for example, a fertilizer containing 28% nitrogen, no phosphorous or potassium, and 9% sulfur is expressed numerically as 28-0-0-9.

#### *The Process of the '343 Patent*

The process disclosed in the '343 patent involves the chemical reaction between urea

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and sulfuric acid, which is referred to as an exothermic reaction because it gives off heat. To prevent high temperature buildup, the reaction is conducted in the presence of a nonreactive, nutritive heat sink which will absorb the heat of reaction. Specifically, a previously-made batch of liquid fertilizer — known as a "heel" — can serve as the heat sink to which more reactants are added. Claims 1 and 2 are representative:

1. In a process for making a concentrated liquid fertilizer by reacting sulfuric acid and urea, to form an end product, the improvement comprising:

- a. providing a non-reactive, nutritive heat sink, capable of dissipating the heat of urea and sulfuric acid, in an amount at least 5% of the end product,
- b. adding water to the heat sink in an amount not greater than 15% of the end product,
- c. adding urea to the mixture in an amount of at least 50% of the total weight of the end product,
- d. adding concentrated sulfuric acid in an amount equal to at least 10% of the total weight of the end product.

2. The process of claim 1 wherein the heat sink is recycled liquid fertilizer.

### Procedural History

Verdegaal brought suit against Union Oil in the United States District Court for the Eastern District of California charging that certain processes employed by Union Oil for making liquid fertilizer products infringed all claims of its '343 patent. Union Oil defended on the grounds of noninfringement and patent invalidity under 35 U.S.C. §§102, 103. The action was tried before a jury which returned a verdict consisting of answers to five questions. Pertinent here are its answers that the '343 patent was "valid" over the prior art, and that certain of Union Oil's processes infringed claims 1, 2, and 4 of the patent. None were found to infringe claims 3 or 5. Based on the jury's verdict, the district court entered judgment in favor of Verdegaal.

Having unsuccessfully moved for a directed verdict under Fed. R. Civ. P. 50(a), Union Oil timely filed a motion under Rule 50(b) for JNOV seeking a judgment that the claims of the '343 patent were invalid under sections 102 and 103. The district court denied the motion without opinion.

### II ISSUE PRESENTED

Did the district court err in denying Union Oil's motion for JNOV with respect to the

validity of claims 1, 2, and 4 of the '343 patent?

### III

#### Standard of Review

When considering a motion for JNOV a district court must: (1) consider all of the evidence; (2) in a light most favorable to the non-moving party; (3) drawing all reasonable inferences favorable to that party; (4) without determining credibility of the witnesses; and (5) without substituting its choice for that of the jury's in deciding between conflicting elements of the evidence. *Railroad Dynamics, Inc. v. A. Stucki Co.*, 727 F.2d 1506, 1512-13, 220 USPQ 929, 936 (Fed. Cir.), cert. denied, 469 U.S. 871 [224 USPQ 520] (1984); *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1546, 220 USPQ 193, 197 (Fed. Cir. 1983). A district court should grant a motion for JNOV only when it is convinced upon the record before the jury that reasonable persons could not have reached a verdict for the nonmoving party. *Railroad Dynamics*, 727 F.2d at 1513, 220 USPQ at 936; *Connell*, 722 F.2d at 1546, 220 USPQ at 197.

To reverse the district court's denial of the motion for JNOV, Union Oil must convince us that either the jury's factual findings are not supported by substantial evidence, or, if they are, that those findings cannot support the legal conclusions which necessarily were drawn by the jury in forming its verdict. See *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893, 221 USPQ 669, 673 (Fed. Cir.), cert. denied, 469 U.S. 857 [225 USPQ 792] (1984). *Railroad Dynamics*, 727 F.2d at 1512, 220 USPQ at 936. Substantial evidence is more than just a mere scintilla; it is such relevant evidence from the record taken as a whole as a reasonable mind might accept as adequate to support the finding under review. *Consolidated Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938); *Perkin-Elmer*, 732 F.2d at 893, 221 USPQ at 673; *SSIH Equip. S.A. v. U.S. Int'l Trade Comm'n*, 718 F.2d 365, 371 n.10, 218 USPQ 678, 684 n.10 (Fed. Cir. 1983). A trial court's denial of a motion for JNOV must stand unless the evidence is of such quality and weight that reasonable and fair-minded persons in the exercise of impartial judgment could not reasonably return the jury's verdict. *Envirotech Corp. v. Al George, Inc.*, 730 F.2d 753, 758, 221 USPQ 473, 477 (Fed. Cir. 1984).

Our precedent holds that the presumption of validity afforded a U.S. patent by 35

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U.S.C. § 282 requires that the party chal-  
lenging validity prove the facts establishing  
invalidity by clear and convincing evidence.  
*American Hoist & Derrick Co. v. Sowa &  
Sons, Inc.*, 725 F.2d 1350, 1360, 220 USPQ  
763, 770 (Fed. Cir.), cert. denied, 469 U.S.  
821 [224 USPQ 520] (1984). Thus, the  
precise question to be resolved in this case is  
whether Union Oil's evidence is so clear and  
convincing that reasonable jurors could only  
conclude that the claims in issue were inval-  
id. See *Perkin-Elmer*, 732 F.2d at 893, 221  
USPQ at 673; *Railroad Dynamics*, 727 F.2d  
at 1511, 220 USPQ at 935.

#### Anticipation

A claim is anticipated only if each and  
every element as set forth in the claim is  
found, either expressly or inherently de-  
scribed, in a single prior art reference. See,  
e.g., *Structural Rubber Prods. Co. v. Park  
Rubber Co.*, 749 F.2d 707, 715, 223 USPQ  
1264, 1270 (Fed. Cir. 1984); *Connell*, 722  
F.2d at 1548, 220 USPQ at 198; *Kalman v.  
Kimberly-Clark Corp.*, 713 F.2d 760, 771,  
218 USPQ 781, 789 (Fed. Cir. 1983), cert.  
denied, 465 U.S. 1026 [224 USPQ 520]  
(1984). Union Oil asserts that the subject  
claims of the '343 patent are anticipated  
under 35 U.S.C. § 102(e)<sup>1</sup> by the teachings  
found in the original application for U.S.  
Patent No. 4,315,783 to Stoller, which the  
jury was instructed was prior art.

From the jury's verdict of patent validity,  
we must presume that the jury concluded  
that Union Oil failed to prove by clear and  
convincing evidence that claims 1, 2, and 4  
were anticipated by the Stoller patent. See  
*Perkin-Elmer*, 732 F.2d at 893, 221 USPQ  
at 673; *Railroad Dynamics*, 727 F.2d at  
1516, 220 USPQ at 939. Under the instruc-  
tions of this case, this conclusion could have  
been reached only if the jury found that the  
Stoller patent did not disclose each and every  
element of the claimed inventions. Having  
reviewed the evidence, we conclude that sub-  
stantial evidence does not support the jury's

<sup>1</sup> Section 102(e) provides:

A person shall be entitled to a patent unless—

(e) the invention was described in a patent  
granted on an application for patent by another  
filed in the United States before the invention  
thereof by the applicant for patent, or on an  
international application by another who has  
fulfilled the requirements of paragraphs (1),  
(2), and (4) of section 371(c) of this title before  
the invention thereof by the applicant for patent

verdict, and, therefore, Union Oil's motion  
for JNOV on the grounds that the claims  
were anticipated should have been granted.

The Stoller patent discloses processes for  
making both urea-phosphoric acid and urea-  
sulfuric acid fertilizers. Example 8 of Stoller  
specifically details a process for making  
30-0-0-10 urea-sulfuric acid products. There  
is no dispute that Example 8 meets  
elements b, c, and d of claim 1, specifically  
the steps of adding water in an amount not  
greater than 15% of the product, urea in an  
amount of at least 50% of the product, and  
concentrated sulfuric acid in an amount of at  
least 10% of the product. Verdegaal disputes  
that Stoller teaches element a, the step of  
claim 1 of "providing a non-reactive, nutri-  
tive heat sink." As set forth in claim 2, the  
heat sink is recycled fertilizer.<sup>2</sup>

The Stoller specification, beginning at col-  
umn 7, line 30, discloses:

Once a batch of liquid product has been  
made, it can be used as a base for further  
manufacture. This is done by placing the  
liquid in a stirred vessel of appropriate  
size, adding urea in sufficient quantity to  
double the size of the finished batch, add-  
ing any water required for the formula-  
tion, and slowly adding the sulfuric acid  
while stirring. Leaving a heel of liquid in  
the vessel permits further manufacture to  
be conducted in a stirred fluid mass.

This portion of the Stoller specification ex-  
plicitly teaches that urea and sulfuric acid  
can be added to recycled fertilizer, i.e., a heel  
or base of previously-made product. Dr.  
Young, Union Oil's expert, so testified. Ver-  
degaal presented no evidence to the contrary.

Verdegaal first argues that Stoller does  
not anticipate because in Stoller's method  
sulfuric acid is added *slowly*, whereas the  
claimed process allows for rapid addition.  
However, there is no limitation in the subject  
claims with respect to the rate at which  
sulfuric acid is added, and, therefore, it is  
inappropriate for Verdegaal to rely on that  
distinction. See *SSIH*, 718 F.2d at 378, 218  
USPQ at 689. It must be assumed that slow  
addition would not change the claimed pro-  
cess in any respect including the function of  
the recycled material as a heat sink.

Verdegaal next argues that the testimony  
of Union Oil's experts with respect to what

<sup>2</sup> Claim 4 is written in terms of approximate  
percentages of all reactants by weight of the end  
product. No argument is made that the process of  
claim 4 would result in a fertilizer product any  
different from that disclosed by Example 8 of  
Stoller.

Stoller teaches could well have been discounted by the jury for bias. Discarding that testimony does not eliminate the reference itself as evidence or its uncontradicted disclosure that a base of recycled fertilizer in a process may be used to make more of the product.

[1] Verdegaal raises several variations of an argument, all of which focus on the failure of Stoller to explicitly identify the heel in his process as a "heat sink." In essence, Verdegaal maintains that because Stoller did not recognize the "inventive concept" that the heel functioned as a heat sink, Stoller's process cannot anticipate. This argument is wrong as a matter of fact and law. Verdegaal's own expert, Dr. Bahme, admitted that Stoller discussed the problem of high temperature caused by the exothermic reaction, and that the heel could function as a heat sink.<sup>3</sup> In any event, Union Oil's burden of proof was limited to establishing that Stoller disclosed the same process. It did not have the additional burden of proving that Stoller recognized the heat sink capabilities of using a heel. Even assuming Stoller did not recognize that the heel of his process functioned as a heat sink, that property was inherently possessed by the heel in his disclosed process, and, thus, his process anticipates the claimed invention. See *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981); *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (CCPA 1971). The pertinent issues are whether Stoller discloses the process of adding urea and sulfuric acid to a previously-made batch of product, and whether that base would in fact act as a heat sink. On the entirety of the record, these issues could only be resolved in the affirmative.

On appeal Verdegaal improperly attempts to attack the status of the Stoller patent as prior art, stating in its brief:

Verdegaal also introduced evidence at trial that the Stoller patent is not prior art under 35 U.S.C. §§ 102(e)/103. Professor Chisum testified that the Stoller patent, in his opinion, was not prior art. . . . This conclusion finds support in *In re Wertheim*, 646 F.2d 527 [209 USPQ 554] (CCPA 1981), and 1 Chisum on Patents §3.07[3].

Appellee Brief at 27 (record cite omitted). Seldom have we encountered such blatant

<sup>3</sup> There is no dispute that the percentage of heel described in Stoller meets the percentage of heat sink required by the claims.

distortion of the record. A question about the status of the Stoller disclosure as prior art did arise at trial. Union Oil asserted that, even though the Stoller patent issued after the '343 patent, Stoller was prior art under section 102(e) as of its filing date which was well before the filing date of Verdegaal's application. Professor Chisum never testified that the Stoller patent was not prior art, but rather, stated that *he did not know* whether it was prior art. An excerpt from the pertinent testimony leaves no doubt on this point:

Q. (Mr. Sutton): And do you know whether the Stoller patent is prior art to the application of the Verdegaal patent?

A. (Prof. Chisum): I don't know that it is, no.

We find it even more incredible that Verdegaal would attempt to raise an issue with respect to the status of the Stoller patent given that the case was submitted to the jury with the instruction that the original Stoller patent application was prior art.<sup>4</sup> Verdegaal made no objection to that instruction below, and in its appeal briefs, the instruction is cavalierly ignored.

In sum, Verdegaal is precluded from arguing that the Stoller patent should not be considered prior art. See Fed. R. Civ. P. 51; *Weinar v. Rollform Inc.*, 744 F.2d 797, 808, 223 USPQ 369, 375 (Fed. Cir. 1984), cert. denied, 105 S.Ct. 1844 (1985); *Bio-Rad Laboratories, Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 615, 222 USPQ 654, 662 (Fed. Cir.), cert. denied, 469 U.S. 1038 (1984).

After considering the record taken as a whole, we are convinced that Union Oil established anticipation of claims 1, 2, and 4 by clear and convincing evidence and that no reasonable juror could find otherwise. Consequently, the jury's verdict on validity is unsupported by substantial evidence and

<sup>4</sup> The jury instruction read:

Stoller filed two patent applications — an original application on October 30th, 1978, and a second on February 7th, 1980. Under the patent laws, the claims of the 343 patent are invalid if you find that the original application (Exhibit BL) anticipates the process claimed in the 343 patent.

Union Oil also argues that Verdegaal's counsel misled the jury by its closing rebuttal argument:

[B]ut I think it's important to keep in mind that [Stoller] couldn't have been a prior patent because it issued a month after the Verdegaal patent had issued.

We disapprove of Verdegaal's tactic which would form the basis for a grant of a motion for a new trial but for our conclusion that outright reversal of the ruling on the motion for JNOV is in order.

question about the prior art asserted that, after the prior art under late which was of Verdegaa's never testified prior art, but know whether on the pertinent point: know whether or art to the patent? now that it is,

able that Verdegaa's issue with Stoller patent led to the jury original Stoller Verdegaa action below, instruction is

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ich would for a new reversal in order.

cannot stand. Thus, the district court's denial of Union Oil's motion for JNOV must be reversed.

### Conclusion

Because the issues discussed above are dispositive of this case, we do not find it necessary to reach the other issues raised by Union Oil. In accordance with this opinion, we reverse the portion of the judgment entered on the jury verdict upholding claims 1, 2 and 4 of the '343 patent as valid under section 102(e) and infringed.

### REVERSED

District Court, E.D. New York

Propper Manufacturing Co. v. Surgicot Inc.

No. CV 85-1363

Decided November 26, 1986

### PATENTS

(1) Infringement — Construction of claims — Doctrine of equivalents (§120.0703)

Accused disposable test pack for hospital sterilizer does not infringe claims at issue, even though same result is obtained, since pack does not function in substantially same manner as claimed test pack, nor is accused test pack's outer, non-porous, gas-impermeable, unitary plastic laminated sheet equivalent of claimed porous outer shell sheets.

(2) Particular patents — Sterilizer Tests

4,486,387, Augurt, Disposable Prevacuum Steam Sterilizer Test Device, not infringed.

Action by Propper Manufacturing Co. against Surgicot Inc. for patent infringement. Judgment for defendant.

It should not be inferred that all of these issues were properly before us. Union Oil appears to assume that on appeal it may dispute the resolution of any issue which is denominated an "issue of law" even though it was not raised in its motion for JNOV. This is incorrect. See *Railroad Dynamics*, 727 F.2d at 1511, 220 USPQ at 934.

Daniel Ebenstein, and Amster, Rothstein & Ebenstein, both of New York, N.Y., for plaintiff.

Gerald J. Flintoft, Michael I. Chakansky, Susan Lee, and Pennie & Edmonds, all of New York, N.Y., for defendant.

Wexler, District Judge.

### FINDINGS OF FACT

### AND CONCLUSIONS OF LAW

1. This is an action by Propper Manufacturing Co., Inc. ("Propper") for infringement of Propper's U.S. Patent No. 4,486,387 issued December 4, 1984 in the name of Thomas A. Augurt, a Propper employee. Propper, a New York Corporation, having an office and principal place of business at 36-04 Skillman Avenue, Long Island City, manufactures and sells medical, surgical and related hospital products. Defendant, Surgicot, Inc. ("Surgicot"), is a subsidiary of Squibb, Inc., with a principal place of business at 55 Kennedy Drive, Smithtown, New York. Surgicot manufactures and sells sterilization indicators and sterility assurance materials for use by hospitals.

2. The Surgicot product charged with patent infringement in this case was developed and is manufactured for Surgicot, on a private label basis, by the ATI Division of Warner Lambert Corp. ("ATI"), located in Los Angeles, California.

3. Propper charges Surgicot with infringement of Claims 1, 3 and 5 of the Augurt patent, which relates to a disposable device known as a "test pack" used to test hospital sterilizers to be sure they are functioning correctly. Propper's infringement charge is based upon Surgicot's sale of its "STAR Pack" disposable test pack, made for Surgicot by ATI. Surgicot contends, however, that the Augurt patent is invalid on the grounds that the Augurt invention would have been "obvious" to one of ordinary skill in the art, 35 U.S.C. § 103 (1982), and, in the alternative, that the STAR Pack product does not infringe the Augurt patent. This action was tried by the Court on August 4-7, 1986.

4. While the technical background of the Augurt patent is not significantly in dispute, some technical background is required to understand the issues in this case. The pre-



specific findings of fact and conclusions of law adequate to form basis for review by U.S. Court of Appeals for the Federal Circuit, since mandate of 35 USC 114 that Federal Circuit "shall review" decision from which appeal is taken implies inherent power in Federal Circuit to require that such decision be capable of review, since, in view of that mandate, there is no reason to apply version of fact finding standard to board's decisions that is less demanding than standard applied to decisions of federal district courts, since standard does not exceed that applied to many other administrative tribunals; and since board has ability to set forth fact findings and conclusions of law at level of specificity equal to that required by Fed.R.Civ.P. 52(a).

## PATENTS

### 2. Practice and procedure in Patent and Trademark Office — Board of Patent Appeals and Interferences — In general (§110.1101)

## JUDICIAL PRACTICE AND PROCEDURE

### Procedure — Judicial review — Standard of review — Patents (§410.4607.09)

Opinion of Board of Patent Appeals and Interferences concluding that claims corresponding to interference count were unpatentable over prior art reference under 35 USC 102 does not set forth specific findings of fact and conclusions of law adequate to form basis for review by U.S. Court of Appeals for the Federal Circuit, since board's opinion lacks claim construction, makes conclusory findings relating to anticipation, and omits any analysis on several claim limitations; anticipation analysis by board must be conducted on limitation by limitation basis, with specific fact findings for each contested limitation and satisfactory explanations for such findings, and claim construction must also be explicit, at least as to any construction disputed by parties to interference, or by applicant or patentee in ex parte proceeding.

### Particular patents — Electrical — Call distribution system

5,036,535, Gechter, Fried, and Pokress, switchless automatic call distribution system, decision in interference holding patent invalid is vacated.

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Patent interference no. 103,051 between Jerry Gechter, Robert L. Pokress, Jeffrey A. Fried, and G. Wayne Andrews (junior party), and Wayne A. Davidson and Diana S. Winter (senior party). From decision holding independent claims corresponding to count unpatentable under 35 USC 102, parties cross-appeal. Vacated and remanded.

William E. Booth, Robert E. Hillman, and Mary D. Mosley-Goren, of Fish & Richardson, Boston, Mass.; Barry E. Bretschneider, Washington, D.C., for appellants Jerry Gechter, Robert L. Pokress, Jeffrey A. Fried, and G. Wayne Andrews.

Charles L. Warren and Dennis J. Williamson, of Lucent Technologies Inc., Naperville, Ill., for cross-appellants Wayne A. Davidson and Diana S. Winter.

Before Michel, Lourie, and Schall, circuit judges.

Michel, J.

On October 26, 1995, the United States Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences (Board) issued a decision in Interference No. 103,051, finding that the independent claims corresponding to the count were unpatentable under 35 U.S.C. § 102 (1994) as anticipated by U.S. Patent No. 4,763,353 (Canale); the dependent claims fell by stipulation. Jerry Gechter, Robert L. Pokress, Jeffrey A. Fried, and G. Wayne Andrews (collectively, Gechter) appeal the unpatentability ruling which invalidates their U.S. Patent No. 5,036,535 (the '535 patent); Wayne A. Davidson and Diana S. Winter (collectively, Davidson) cross-appeal the same ruling which effectively rejects the claims in their application, Serial No. 07/748,147. The case was submitted for our decision after oral argument on March 7, 1997. Because the Board failed to set forth findings of fact adequate to enable us to determine whether its decision of anticipation is clearly erroneous, we vacate the Board's decision and remand the case for preparation of an opinion that makes the fact findings and claim construction necessary to make the decision reviewable on appeal.

## BACKGROUND

The senior party, Davidson, provoked the interference by copying the claims of

Gechter's patent (the '535 patent) in his application. The claims of both Davidson and Gechter are directed to an automatic call distribution system that automatically distributes calls over a telephone network to a group of telephone operators who may be located distant from the central number and are waiting to receive calls.<sup>1</sup> The '535 patent has 63 claims, only claims 1 and 49 being independent. Claim 1, which corresponds exactly to the sole count in the interference, recites:

An automatic call distributing system for automatically distributing telephone calls placed over a network to one of a plurality of agent stations connected to said network via network service interfaces and providing agent status messages to said network, said system comprising

receiving means connected via a network service interface to said network for receiving said agent status messages and call arrival messages from said network indicating that incoming calls have been made on said network, said agent status messages being generated at said agent stations and communicated through said network service interfaces and network to said receiving means, and

routing means responsive to said receiving means for generating a routing signal provided to the network to cause said network to establish a connection directly between said incoming call and an agent station through the network so that said connection is external of said routing means.

In its Final Decision, the Board found the independent claims corresponding to the count to be unpatentable to both Gechter and Davidson as anticipated by Canale.<sup>2</sup> The Board limited its anticipation analysis essentially to two paragraphs of its opinion. It focused on the findings that (1) Canale disclosed "agent status messages of these claims"; and (2) the claims corresponding to

the count required only that the agent status messages have the same "content" throughout their transmission. The Board did not expressly construe the limitation, "agent status messages," before it determined that Canale reads on that limitation and the count. Gechter appeals from the Board's decision, arguing that the Board failed to interpret properly the limitation in light of his specification and therefore clearly erred in finding anticipation. Davidson cross-appeals, contending that if this court finds Gechter's claims corresponding to the count patentable over Canale, then it should also find that Davidson's claims corresponding to the count are patentable over Canale by reading the count in light of Davidson's specification. We have jurisdiction over this appeal pursuant to 35 U.S.C. § 141 (1994) and 28 U.S.C. § 1295 (a) (4) (A) (1994).

# I.

Under 35 U.S.C. § 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim. *In re Bond*, 910 F.2d 831, 832, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). As the Board's finding of anticipation presents a question of fact, this court's review is limited to deciding whether such finding was clearly erroneous. *In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). Implicit in our review of the Board's anticipation analysis is that the claim must first have been correctly construed to define the scope and meaning of each contested limitation. See, e.g., *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) ("[T]o properly compare [an allegedly anticipatory prior art reference] with the claims at issue, we must construe the term 'computer' to ascertain its scope and meaning."). Claim construction is a question of law and therefore reviewed *de novo*. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979, 34 USPQ2d 1321, 1329 (Fed. Cir. 1995) (in banc), *aff'd*, 116 S. Ct. 1384 [38 USPQ2d 1461] (1996).

# A.

[1] The relevant statute and our own case law compel our vacatur of the Board's decision. By appealing the Board's decision to this court, Gechter invoked our jurisdiction under 35 U.S.C. § 141, which provides that "[a] party to an interference dissatisfied with the decision of the Board of Patent Appeals and Interferences on the interference may appeal the decision to the United

<sup>1</sup> Because the disposition of this case rests on reviewability, not the merits, we do not describe the technology and discuss the facts only as necessary for this decision.

<sup>2</sup> The PTO may, during the course of an interference, determine the patentability of any claim involved in the interference. See *Rowe v. Dror*, No. 96-1304, slip op. at 5 [42 USPQ2d 1550] (Fed. Cir. April 21, 1997); see also 37 C.F.R. §§ 1.633(a), 1.641 (1996). Because the parties stipulated that the patentability of all of the dependent claims would rise or fall with that of the independent claims, the Final Decision of the Board was dispositive of the entire interference.

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In addition, the district court had focused its infringement analysis on only one claim limitation, and had concluded, without analysis, that that claim limitation was met by the accused device. *Id.* at 791, 35 USPQ2d at 1259-60. After noting that such a conclusory finding was entirely inadequate under Fed. R. Civ. P. 52(a), we concluded: "The entire omission of a claim construction analysis from the opinion, and the conclusory factual findings on infringement, each provide an independent basis for remand. Because insufficient findings preclude meaningful review by this court, we remand." *Id.*; see also *Oakley, Inc. v. International Tropic-Cal, Inc.*, 923 F.2d 167, 168, 17 USPQ2d 1401, 1403 (Fed. Cir. 1991) (preliminary injunction vacated because district court's findings of fact and conclusions of law were insufficient to allow meaningful appellate review).

Similarly, in *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 228 USPQ 90 (Fed. Cir. 1985), we vacated the district court's invalidity decision under 35 U.S.C. § 103 (1994) for failure to set forth findings on the four factual inquiries delineated in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). In assessing the adequacy of the lower court's findings to support its obviousness determination, we reasoned that "we must be convinced from the opinion that the district court actually applied *Graham* and must be presented with enough express and necessarily implied findings to know the basis of the trial court's opinion." *Loctite*, 781 F.2d at 873, 228 USPQ at 98. In *Loctite*, because the district court "virtually abandoned" the *Graham* fact finding requirements, we vacated its obviousness holding for failure to comply with Rule 52(a) and remanded for the district court to make specific findings for each *Graham* inquiry. *Id.*

In light of this court's statutory mandate to "review" decisions from the Board, we see no reason in law or logic to apply a less demanding version of the fact finding standard to the Board's decisions any more than we would apply a lesser version of the clearly erroneous review standard. As we have said, "the decisions of the PTO boards have been reviewed on the record [by this court], by the same standards as applied to a decision from a district court[.]" *In re Leuders*, No. 96-1391, slip op. at 12-13 [42 USPQ2d 1481] (Fed. Cir. April 24, 1997) (discussing obviousness); see 35 U.S.C. § 144; see also 9A Charles A. Wright & Arthur R. Miller, *Federal Practice & Procedure* § 2573, at 484-85 (1995) ("[Rule 52's] application to patent cases has never been doubted, and a principle substantially similar to Rule 52

governs the effect to be given the findings of the Patent Office in the district court." (footnotes omitted)). It is, of course, true that the Board is not bound by the Federal Rules of Civil Procedure, which by their terms apply only to the district courts. Nor, like the PTO Trademark Trial and Appeal Board, has the Board voluntarily bound itself to them. See 37 C.F.R. § 2.116 (1996). But the Board must nevertheless meet an equivalent standard.

From a practical, judicial policy standpoint, moreover, patentability (validity) issues such as anticipation, whether decided by the Board or by district courts, should be reviewed similarly. If we did not require the Board to adhere to the same level of specificity in explicit fact findings and legal conclusions to support an anticipation finding, appellate review of the very same claim might produce disparate results, depending simply on which tribunal decided the issue. See *Leuders*, slip op. at 18-19 ("clear error" standard of review should apply to Board fact findings in order to maintain consistency with standard of review for district court fact findings). Our holding avoids this kind of disparity.

Nor does the standard we apply today exceed that applied to many other administrative tribunals. "It is well established that agencies have a duty to provide reviewing courts with a sufficient explanation for their decisions so that those decisions may be judged against the relevant statutory standards; and that failure to provide such an explanation is grounds for striking down the action." *Mullins v. United States Dep't of Energy*, 50 F.3d 990, 992 (Fed. Cir. 1995) (citing *SEC v. Chenery Corp.*, 318 U.S. 80, 94 (1943)). Furthermore, we assume the Board's ability to set forth fact findings and conclusions of law at the level of specificity equal to that required by Rule 52(a). Many Board members, now known as "Administrative Patent Judges," are experienced former senior examiners. Due to their technical expertise as well as their opinion writing experience as administrative judges, they are more than capable of providing the adequate fact finding required by our cases reviewing the PTO Board, and also called for regarding other tribunals in Rule 52(a) and administrative law decisions. See 35 USC § 7(a) (1994) ("The examiners-in-chief shall be persons of competent legal knowledge. . ."). Moreover, in the past we have required administrative judges of other boards to set forth adequate findings of fact to support their decisions. See, e.g., *RMI, Inc. v. United States*, 800 F.2d 246, 250 (Fed. Cir. 1986) (decision vacated and re-

manded to the Contract Appellate findings of fact).

Judged under the Board's opinion necessary for the claims were unpatentable under 35 U.S.C. § 102, the following, limited

With respect to the claims, the Board considered the disclosures of these claims. The signals represent messages may be 102, the mess status message positions 103-1 changes as they when forwarded 108 (station set status messages the same mess agent stations.

Notably absent is any explanation why Canale contacted the claimant. Moreover, the Board's justification appears to be, asserting that the Canale re-written description "of the meaning of the mean in the independent claim, the Board every limitation in shown in the single F.2d at 832, 15 U.S.

[2] In the present case, the Board's opinion lacks a claim construction analysis relating to the claim. For example, the Board merely construed the "sages" before finding just such "agent station, the Board never the structures disclosed for the claimed "re the Board expressly means" disclosed in structurally equivalent Canale. Moreover, failed to define the receiving means, as



manded to the Armed Services Board of Contract Appeals because of inadequate findings of fact).

## II.

Judged under the standard set forth above, the Board's opinion lacks the level of specificity necessary for our review. In concluding that the claims corresponding to the count were unpatentable over Canale under 35 U.S.C. § 102, the Board provided only the following, limited analysis:

With respect to Gechter's argument, it is considered that the [prior art] reference discloses the agent status messages of these claims. . . . Although the electrical signals representative of the [prior art] messages may be modified by controller 102, the message content of the agent status messages derived from the agent positions 103-1 to 103-n (the line status changes as they occur) remains the same when forwarded to the receiving means 108 (station set interface). Thus, the agent status messages received by means 108 are the same messages originating with the agent stations.

Notably absent from the Board's opinion is any explanation for whether, how, and why Canale contains each of the other limitations of the claim. Yet the Board does not say their presence in Canale was conceded. Moreover, the Board's only other attempted justification appears in a footnote to its opinion, asserting that "neither party has argued that the Canale reference does not include a written description of an equivalent structure" of the means-plus-function recitations in the independent claims. Nevertheless, to hold that a prior art reference anticipates a claim, the Board must expressly find that every limitation in the claim was identically shown in the single reference. *Bond*, 910 F.2d at 832, 15 USPQ2d at 1567.

[2] In the present case, the Board's opinion lacks a claim construction, makes conclusory findings relating to anticipation, and omits any analysis on several limitations. For example, the Board opinion does not separately construe the term "agent status messages" before finding that Canale discloses just such "agent status messages." In addition, the Board never construed the scope of the structures disclosed in the specification for the claimed "receiving means," nor did the Board expressly find that the "receiving means" disclosed in the specification was structurally equivalent to that embodied in Canale. Moreover, the Board's opinion also failed to define the exact function of the receiving means, as well as to find that Can-

ale disclosed the identical function. See *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934, 4 USPQ2d 1737, 1739 (Fed. Cir. 1987) (in banc) (means-plus-function limitation covers structure that performs the identical function and is the same structure described in the specification or an equivalent thereof). The parties contest these issues on appeal, but the relevant findings were omitted from the Board's opinion. In *Bond*, this court vacated the Board's anticipation decision because it failed to make one particular subsidiary finding. In that case, the Board determined that a prior art reference anticipated the applicant's claimed telephone answering machine, finding that the reference disclosed the claimed "delay means." 910 F.2d at 833, 15 USPQ2d at 1568. The delay means disclosed in the reference, however, was not identical to the delay means in the specification. This court vacated the Board's anticipation decision because the Board made no specific finding that, pursuant to 35 U.S.C. § 112, ¶ 6 (1994), the delay means in the specification and that embodied in the prior art reference were structurally equivalent. *Id.* Here, the Board's opinion omits not one, but several crucial findings. We therefore must vacate and remand.

## CONCLUSION

In sum, we hold that the Board is required to set forth in its opinions specific findings of fact and conclusions of law adequate to form a basis for our review. In particular, we expect that the Board's anticipation analysis be conducted on a limitation by limitation basis, with specific fact findings for each contested limitation and satisfactory explanations for such findings.<sup>3</sup> Claim construction must also be explicit, at least as to any construction disputed by parties to the interference (or an applicant or patentee in an ex parte proceeding).

VACATED AND REMANDED.

## COSTS

<sup>3</sup> While not directly presented here, obviousness determinations, when appropriate, similarly must rest on fact findings, adequately explained, for each of the relevant obviousness factors in the Supreme Court's decision in *Graham*, 383 U.S. at 17-18, 148 USPQ at 467, and its progeny in this court; see, e.g., *Loctite*, 781 F.2d at 872, 228 USPQ at 97.

Each party shall bear its own costs for this appeal.

**U.S. District Court  
Central District of California**

National Customer Engineering Inc. v.  
Lockheed Martin Corp.

No. CV 96-8938 DDP (ANx)

Decided February 14, 1997

**TRADEMARKS AND UNFAIR TRADE PRACTICES**

**1. Types of marks — Names — Corporations (§327.1705)**

Unauthorized use of registered trademark as part of corporate title and name may be deemed trademark infringement.

**2. Types of marks — Arbitrary or fanciful — Particular marks (§327.0803)**

Term "Mountain," used with reference to computer data storage products, is arbitrary, and thus inherently strong, mark; infringement defendants' contention that "Mountain" mark is nonetheless entitled to lower level of protection under crowded field doctrine is without merit, since none of marks cited by defendants relate to computer data storage products, and thus plaintiff's inherently strong mark has not been weakened.

**3. Infringement; conflicts between marks — Likelihood of confusion — Particular marks — Confusion likely (§335.0304.03)**

Plaintiff has demonstrated likelihood of confusion between its "Mountain" mark and defendants' "MountainGate" trade name, both for computer data storage products, since mark and trade name are substantially similar, since plaintiff has presented evidence of actual confusion, since parties' products are sufficiently similar to create likelihood of confusion, even though plaintiff's products are used in desktop computing and defendant manufactures library systems, since both parties make direct sales to end users and employ similar marketing channels, and since evidence indicates that defendants adopted and used trade name in bad faith.

**4. Infringement; conflicts between marks — Likelihood of confusion — Evidence of — In general (§335.0303.01)**

Defendants' adoption and continued use of "MountainGate" trade name is indicative of bad faith and infringement of plaintiff's "Mountain" mark for computer data storage products, since defendants filed application for federal registration of "MountainGate" which was rejected by Patent and Trademark Office on ground that it was likely to be confused with plaintiff's mark, since defendants adopted "MountainGate" as trade name despite that rejection, and since PTO's rejection of application is entitled to serious consideration in likelihood of confusion analysis.

**5. Infringement; conflicts between marks — Defenses — Laches or limitations period (§335.1005)**

Plaintiff's trademark infringement action is not barred by laches, since defendants used "MountainGate" trade name with knowledge that Patent and Trademark Office had found it likely to be confused with plaintiffs' "Mountain" mark, and thus are not innocent users entitled to rely on estoppel or laches; plaintiff did not unduly delay in bringing suit, since laches is not measured from defendant's first use of contested mark, but from date that defendant began significantly impacting plaintiff's goodwill and business reputation, and since plaintiff filed instant action promptly after learning of defendant's use of its trade name, writing cease and desist letter, and receiving no substantive response.

Action by National Customer Engineering Inc. against Lockheed Martin Corp. and MountainGate Data Systems Inc. for trademark infringement. On plaintiff's motion for preliminary injunction. Motion granted.

Daniel M. Cislo, Donald M. Cislo, and Robert James Lauson, of Cislo & Thomas, Santa Monica, Calif., for plaintiff.

David W. Quinto and John B. Quinn, of Quinn, Emanuel, Urquhart & Oliver, Los Angeles, Calif., for defendants.

Pregerson, J.

This matter concerns Plaintiff's motion for preliminary injunction. Oral argument was heard on February 27, 1997. After considering the oral and written arguments, and the application of the law, the court grants Plaintiff's motion in full.

**BACKGROUND**

In 1995 Plaintiff, National Customer Engineering, Inc. ("NCE"), added to a portfolio of trademarks the word mark MOUNTAIN. NCE sells computer data storage products such as DLT (Digital Library Tape) under the MOUNTAIN brand. The MOUNTAIN brand has been in continuous use since 19

Defendant MountainGate Data Systems, Inc. ("MountainGate") is a subsidiary of Defendant Lockheed Martin Corp. ("Lockheed"). Like Lockheed, MountainGate sells computer data storage products. MountainGate was founded in 1972 as "MDB". MountainGate changed to its present name about this time. MountainGate's Motion for Patent and Trademark Office ("MountainGate") as a trademark was denied on the ground that it was confusingly similar to MOUNTAIN mark. Defendants continued to use it as a trade name.

NCE first became aware of MountainGate in October 1996. On October 28, 1996, NCE sent MountainGate a cease and desist letter. After receiving no response, NCE filed this action. Plaintiff now moves for preliminary injunction enjoining Defendant from using MountainGate trade name.

**DISCUSSION**

**A. Legal Standard**

The Ninth Circuit has held that a preliminary injunction should be granted if the plaintiff shows either a combination of factors, or irreparable injury, or that the balance of equities is in its favor. The factors are raised and the balance is struck sharply in the moving party's favor. *Miss World (UK) Ltd. v.*

## Court of Appeals, Federal Circuit

Richardson v. Suzuki Motor Co. Ltd.

Nos. 87-1497, -1498, -1502, 88-1083, -1084

Decided February 16, 1989

## PATENTS

1. Patentability/Validity — In general (§115.01)

## JUDICIAL PRACTICE AND PROCEDURE

## Procedure — Jury trials (§410.42)

Jury may decide questions of anticipation and obviousness, either as separate special verdicts or en route to verdict on validity, which is also proper question for determination by jury, since there is no reason to distinguish submission of legal questions to jury in patent cases from such jury submissions routinely made in other types of cases.

## PATENTS

2. Patentability/Validity — Anticipation — Prior art (§115.0703)

Jury's "advisory" verdict that patentee's rising rate motorcycle suspension was not anticipated, and federal district court's independent holding of validity, are affirmed since reasonable jury could have concluded that claim in issue was not anticipated, in view of totality of evidence including prior art consisting of two prior motorcycle suspension patents and two designs for race car suspensions, and since analysis of district court's decision, based on same prior art, shows no clear error.

3. Patentability/Validity — Obviousness — Evidence of (§115.0906)

## JUDICIAL PRACTICE AND PROCEDURE

## Procedure — Jury trials (§410.42)

Federal district court's conclusion, after jury entered verdict of non-obviousness, that obviousness of plaintiff's invention had not been proven and that claim in issue is not invalid, is affirmed despite court's erroneous belief that obviousness issue could only be presented to jury for "advisory" verdict, since review of record shows that there was substantial evidence on which reasonable jurors could conclude that claim had not been proved obvious, and therefore no reversible error occurred.

## PATENTS

4. Infringement — Doctrine of equivalents — In general (§120.0701)

## JUDICIAL PRACTICE AND PROCEDURE

## Procedure — Jury trials (§410.42)

Federal district court's judgment of infringement, entered on jury verdict of infringement, is affirmed despite jury's special verdicts that defendant's motorcycle rear suspension linkages are not "equivalent" to patented system, since jury was given incorrect definition of "equivalents" and special verdict interrogatories were prejudicial in that they focused on differences between patented and accused devices without mention of similarities, and since, given correct instructions, reasonable jury could not have found that accused systems, which contain every element of relevant claims but one, are not equivalent to claimed invention.

## REMEDIES

5. Monetary — Damages — Patents — Reasonable royalty (§510.0507.03)

Jury's award of 50 cents for each infringing motorcycle sold by defendant as damages for infringement of plaintiff's motorcycle suspension system is vacated, since federal district court improperly instructed jury that infringement was "relatively minor," and since, absent such prejudicial instruction, there was no reasonable basis on which jury could have found that royalty awarded was reasonable.

## PATENTS

6. Title — Construction of license agreement (§150.07)

## TRADEMARKS AND UNFAIR TRADE PRACTICES

## Trade secrets — In general (§400.01)

Federal district court incorrectly instructed jury that only "valid trade secrets" were subject to restraints in contract between plaintiff and defendant since, in view of defendant's agreement not to use or disclose "technical information, know-how, inventions, use data, and design specifications" that it received from plaintiff, jury instructions limited scope of protected information beyond that set forth in contract.

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**7. Trade secrets — Elements of trade secret (§400.03)****Trade secrets — Disclosure and misappropriation (§400.07)**

Federal district court erred by instructing jury that information defendant could have developed on its own was not subject to trade secret protection, that "slavish" copying is necessary for trade secret misappropriation, and that jury could decide whether plaintiff could have both valid patent and legal protection for later-developed information on patented invention, since information capable of independent development or discovery from other sources is not excluded from trade secret protection, misappropriator cannot escape liability by showing modification of, or improvement upon, protected information, and legal status of information and improvements made after patent application has been filed is independent of presence or absence of patent application or ensuing patent.

**8. Trade secrets — Elements of trade secret (§400.03)****JUDICIAL PRACTICE AND PROCEDURE****Procedure — Jury trials (§410.42)**

Federal district court abused its discretion in granting defendant's motion for new trial on issue of whether certain information constituted trade secrets, since court may not vacate jury verdict unless verdict is contrary to clear weight of evidence, is based upon false evidence, or would cause miscarriage of justice, and since there was substantial evidence before jury that information in question was not publicly known, that defendant agreed to receive and preserve it in confidence, and that information fully satisfies statutory and jurisprudential requirements for protectible trade secrets.

**REMEDIES****9. Monetary — Damages — In general (§510.0501)**

Jury's assessment of \$104,000 in damages for defendant's use of certain information obtained from plaintiff is affirmed, since there was substantial evidence presented at trial that would enable jury to determine sum awarded.

**10. Non-monetary and injunctive — Equitable relief — In general (§505.0701)****Non-monetary and injunctive — Equitable relief — Permanent injunctions (§505.0709)**

Federal district court erred in denying plaintiff's motion for injunction after entering final judgment in plaintiff's favor on issue of patent infringement, since irreparable harm is presumed when clear showing of patent validity and infringement is made and therefore injunction should issue if no sound reason exists for denying it, and patentee should not be denied its right to exclude others from using invention once infringement is established.

**PATENTS****11. Patent misuse — Improper procurement and enforcement (§140.03)****TRADEMARKS AND UNFAIR TRADE PRACTICES****Trade secrets — Disclosure and misappropriation (§400.07)****REMEDIES****Monetary — Damages — Unfair trade practices (§510.0508)**

Federal district court improperly vacated jury verdicts and ordered new trial on fraud issues after jury found for plaintiff on those issues and entered award of punitive damages, since, although court may have believed that defendant did not commit fraud, record shows that there was evidence on which reasonable jury could support verdicts, and since jury's award of punitive damages, which may be assessed if fraud has been expressly found, was not so disproportionate to damages sustained as to be result of passion or prejudice.

**PATENTS****12. Patentability/Validity — Inventorship (§115.13)****Title — Assignments (§150.03)****REMEDIES****Non-monetary and injunctive — Equitable relief — In general (§505.0701)**

Federal district court erred in denying motion for assignment of defendant's patent to plaintiff after jury returned special verdict finding that invention asserted in patent was

first disclosed to defendant, separate special verdict that plaintiff was not the inventor asserted in patent, which court based its decision on, reflects jury's understanding of third party and its role in development of an invention and therefore force of verdict narrows issue to who first disclosed invention since neither question of sole or joint inventorship was before court, nor presence of defendant in development of invention beyond that defendant, negates remedy of assignment based on jury verdict finding ownership of patent.

**13. Monetary — Damages — Interest (§510.0509)**

Federal district court erred in granting plaintiff's request for prejudgment interest on damage awards, since allowance of such interest is discretionary in instant case, there is no special circumstance for trade secret misappropriation treated differently from patent infringement.

**JUDICIAL PRACTICE AND PROCEDURE****14. Procedure — Jury trials (§410.42)****REMEDIES****Monetary — Damages — Increased damage**

Federal district court erred in submitting question of damages to jury, since evidence concerning fraud, misappropriation, trade secrets, absence of assignment, and commencement of development of invention, and defendant's knowledge of invention, viewed in light of all evidence, does not permit finding of assignment as only reasonable conclusion.

**15. Monetary — Damages — Patents (§510.0501)****Monetary — Damages — Attorney's fees — Fair trade practices**

Federal district court erred in awarding third of costs to plaintiff, since major substantive issues were not

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first disclosed to defendant by plaintiff, since separate special verdict in which jury found that plaintiff was not "real" inventor of invention asserted in disputed patent, and on which court based its denial of motion, reflects jury's understanding of co-inventor status of third party and contributions of others in development of alternate embodiment of invention and therefore does not diminish force of verdict naming plaintiff as person who first disclosed invention to defendant, since neither question of whether plaintiff is sole or joint inventor, which is not before court, nor presence in claims of further modification beyond that disclosed by plaintiff to defendant, negates imposition of equitable remedy of assignment of patent, and since, based on jury verdict, plaintiff is entitled to ownership of patent as against defendant.

### 13. Monetary — Damages — Prejudgment interest (§510.0511)

Federal district court erred in denying plaintiff's request for prejudgment interest on damage awards for patent infringement and misappropriation of trade secrets, since allowance of such interest is required if, as in instant case, there is no showing of exceptional circumstances or reason why damages for trade secret misappropriation should be treated differently from those for patent infringement.

## JUDICIAL PRACTICE AND PROCEDURE

### 14. Procedure — Jury trials (§410.42)

## REMEDIES

### Monetary — Damages — Patents — Increased damages (§510.0507.07)

Federal district court erred in refusing to submit question of willful patent infringement to jury, since evidence adduced at trial concerning fraud, misappropriation of trade secrets, absence of any opinion by U.S. counsel concerning validity of plaintiff's patent at commencement of defendant's infringing activity, and defendant's bad faith, when viewed in light most favorable to plaintiff, does not permit finding of no willful infringement as only reasonable conclusion.

### 15. Monetary — Attorney's fees; costs — Patents (§510.0905)

### Monetary — Attorney's fees; costs — Unfair trade practices (§510.0907)

Federal district court's award of only one-third of costs to plaintiff who prevailed on major substantive issues in suit exceeded

court's authority, since plaintiff is entitled to statutory costs incurred before trial court.

### Particular patents — General and mechanical — Vehicle suspension systems

3,907,332, Richardson, suspension system for two-wheeled vehicles, valid and infringed.

4,457,393, Tamaki and Suzuki, suspension device for motorcycles, assignment to Donald G. Richardson ordered.

Appeal from the U.S. District Court for the Central District of California, Gray, J.

Action by Donald G. Richardson against Suzuki Motor Co. Ltd., U.S. Suzuki Motor Corp., Kawasaki Heavy Industries Ltd., Kawasaki Motors Corp., Yamaha Motor Co. Ltd., Yamaha Motor Corp. U.S.A., Kayaba Industry Co. Ltd. and Kayaba Industry Co., for patent infringement, breach of contract, fraud and misappropriation of trade secrets. From judgment holding plaintiff's patent not invalid and infringed, awarding damages for infringement and use of plaintiff's information by defendant, and from grant of defendant's motion for new trial on issues of trade secrets, fraud, and damages awarded for fraud, Richardson and Suzuki defendants cross-appeal. Affirmed in part, reversed in part, vacated in part, and remanded.

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Before Skelton, senior circuit judge, and Smith and Newman, circuit judges.

Newman, J.

This appeal and cross-appeal are from the judgment of the United States District Court for the Central District of California, and involve issues of patent validity, infringement, breach of contract, fraud, misappropriation of trade secrets, and several related

issues.<sup>1</sup> We affirm in part, reverse in part, vacate in part, and remand.

### The Invention

The invention that led to this litigation is a motorcycle rear-wheel suspension system that smooths the ride over rough terrain, of interest particularly in off-road motorcycle riding. The roughness of the ride is due to bumps and dips in the terrain, transmitted from the wheels to the frame. An optimum rear-wheel suspension will maintain tire contact with the ground despite deflection by irregularities, will avoid "bottoming out" (an unsafe rising of the suspension), yet will achieve a smooth ride without reduction in safety. In 1974 even the best available suspensions did not maintain adequate tire contact with the ground in conjunction with attempts to eliminate bottoming out.

In mid-1974 Donald G. Richardson, a young mechanic in California, devised a solution to the problem, a modified suspension system that he installed in his own motocross motorcycle. Richardson replaced the conventional two-spring shock absorber suspension system with a system consisting of a single shock absorber plus a linkage consisting of a bell crank and connecting rod. This linkage generated a "rising rate"<sup>2</sup> — a characteristic critical to the issue — and produced a far superior ride, even as it eliminated the dangerous bottoming out. Richardson testified about his first ride, at a hilly construction site near his house, as "utopia. I mean it was incredible"; over hard bumps it was "uncanny because it was so smooth"; "[t]he rear end didn't kick up. It just didn't bottom out and stayed down"; an "unbelievable feeling".

On November 25, 1974 Richardson filed a United States patent application on his invention, and on September 23, 1975 the application issued as United States Patent No. 3,907,322 (hereinafter the '332 or Richardson patent). Patent claim 9, which incorporates claim 1, is the only claim in suit. Claims 1 and 9 follow:

1. A suspension for two wheeled vehicles comprising:

a frame for the vehicle comprising a generally closed shape including upper and lower portions

and a swing arm pivotally connected to the lower portion of said frame;

said swing arm comprising a pair of arms rotatably supporting a wheel about a horizontal axis generally at the end of said swing arm;

the pivotal mounting of said arm to said frame being about a generally horizontal axis whereby said wheel is both rotatable about its own horizontal axis and deflectable in a generally vertical direction about the axis of said swing arm;

spring means having a first end pivotally secured to said frame;

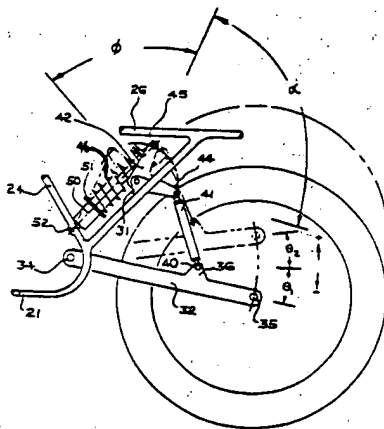
a link member including an intermediate point pivotally mounted on said frame about an axis, parallel to the axis of said swing arm at a point spaced therefrom;

pivotal connection means between said link member and the second end of said spring;

a bar pivotally connected at one end to said swing arm and at the opposite end to said link member at a position spaced from said spring connection;

said spring, bar, swing arm and link connected whereby deflection of said swing arm displaces said bar and rotates said link member to compress said spring. 9. The combination in accordance with claim 1 wherein said assembly provides a rising spring rate as a function of deflection of said swing arm.

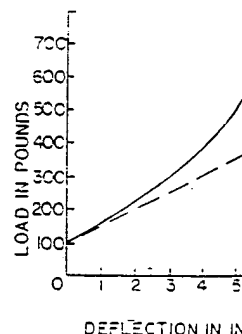
Figure 2 of the '332 patent specification is illustrative:



<sup>1</sup> Richardson v. Suzuki Motors Co. and Suzuki U.S. Motors Corp., Nos. CV 80-2589-WPG and CV 82-3826-WPG (C.D. Cal. June 29, 1987 and July 13, 1987).

<sup>2</sup> "Rising rate" was described by witnesses as follows: "as the suspension travels upward, the resistance to upward travel will increase"; and it "gets stiffer as the wheel moves up toward the vehicle or moves upward in the frame."

As the rear wheel is bumps in the terrain, that is pivotally connected to the motorcycle frame (21) and the compression rod (42) that is pivotally connected to the frame. The bell crank (31) and compresses, the spring (46) that is connected at one end (45) to the frame and at the other end (52) to the link member. The interaction of these components increases the force on the spring, thereby increasing the rate of resistance to wheel with increased motion. This varying resistance rate" of claim 9, and is of the '332 patent:

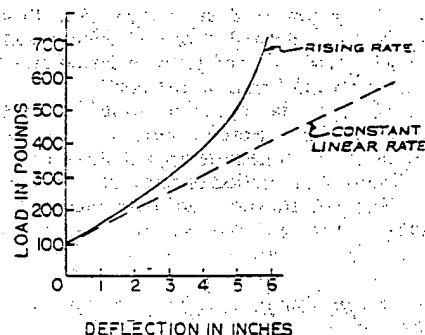


### The Contact

In October 1978 Richardson signed a one year Option and License Agreement with the Suzuki Motor Co. ("Suzuki").

The Agreement gave Richardson the right to test and evaluate the suspension, and the exclusive right to license to others. Richardson's "proprietary information, know-how, in data", collectively defined as the "Licensed Rights

As the rear wheel is deflected upward by bumps in the terrain, the swing arm (32) that is pivotally connected at (34) to the motorcycle frame (21) rotates upward, pushing the compression rod (41) into the bell crank (42) that is pivotally secured (31) at its intermediate point to the motorcycle frame. The bell crank rotates on its pivot (31) and compresses, downward against the frame, a spring (46) that is pivotally connected at one end (45) to the bell crank, and at its other end (52) to the motorcycle frame. The interaction of these interconnected parts increases the force on the spring, increasing the rate of resistance to deflection of the wheel with increased movement of the wheel. This varying resistance is the "rising spring rate" of claim 9, and is illustrated in Figure 5 of the '332 patent:



#### The Contact with Suzuki

In October 1978 Richardson entered into a one year Option and License Agreement with the Suzuki Motor Co., Ltd. of Japan ("Suzuki").

The Agreement gave Suzuki the exclusive right to test and evaluate Richardson's suspension, and the exclusive option to acquire an exclusive license to the '332 patent and Richardson's "proprietary technical information, know-how, inventions, and use data", collectively defined in the Agreement as the "Licensed Rights."

The Agreement required Richardson to disclose to Suzuki all technical information, know-how, inventions, use data and design specifications for his suspension, that he possessed or that he acquired during the option period. Suzuki agreed to preserve all such information in confidence, and not to use any of it "for any purpose other than to evaluate for commercial feasibility of manufacture and marketing during the Option Period." Suzuki agreed that this obligation of confidence continued if Suzuki did not exercise the option. Excepted from the confidentiality obligation was all information previously known to Suzuki or at any time generally known to the public.

The agreement required Richardson to make prototypes of his suspension system for Suzuki's evaluation. Richardson installed his suspension in Suzuki's sample 1978 and 1979 model production motorcycles, and disclosed to Suzuki the technical information and know-how that he possessed, including improvements and other information that he developed during this period. He met frequently with Suzuki engineers and other Suzuki personnel in the United States and in Japan to communicate this information and generally to improve performance and to facilitate testing and evaluation.

There was testimony at trial of initial incredulity on the part of Suzuki engineers concerning Richardson's suspension, of Suzuki's past failures in designing a suspension with the desired characteristics, and of Suzuki's favorable response to the performance of Richardson's suspension. The evidence included internal Suzuki documents made while Suzuki was testing Richardson's suspension, stating that it would "take a long time", perhaps three years, for Suzuki to develop a satisfactory suspension.

In early 1979 Richardson and a colleague Cazort conceived an improvement in the linkage-generated rising rate suspension, which they called the "Alternate Shock Mount" and which they disclosed to Suzuki, accompanied by drawings and blueprints made by Cazort. The difference from the structure described in the '332 patent is that in the Alternate Shock Mount the lower end of the spring is pivotally secured to the swing arm which is pivotally secured to the frame, instead of being pivotally secured directly to the frame, resulting in increased strength.

In May 1979 Richardson's first prototype for Suzuki, wherein Richardson, aided by Cazort, installed his suspension in a Suzuki 1978 production model, was successfully tested in Japan. Testimony at trial included statements attributed to Suzuki's test riders that they could see the bumps but not feel



them, and other commentary evidencing a highly favorable reaction to Richardson's suspension.

It was a stipulated fact that after these tests Suzuki made the decision to place the linkage-generated rising rate suspension system into production, and started development work for this purpose.

On October 16, 1979 Suzuki filed a patent application in Japan. The corresponding United States patent, filed on October 8, 1980, claims the Alternate Shock Mount suspension as disclosed by Richardson, and also claims a modification made by Suzuki called the "criss-cross". Suzuki named two of its engineers, Hirohide Tamaki and Manabu Suzuki, as the inventors.

Suzuki twice requested and was granted one-month extensions of its Option and License Agreement with Richardson. In December 1979 Suzuki informed Richardson that it would not exercise the option.

In March 1980 Suzuki began competitive racing in the United States of Suzuki motorcycles using the Alternate Shock Mount suspension, which Suzuki named the "Full Floater". Suzuki met with marked racing success, the Full Floater receiving favorable publicity and high acclaim from the public. Extensive advertising was directed to the Full Floater rising rate suspension. The product achieved widespread commercial success.

Suzuki denied any obligation to Richardson.

### Litigation

Richardson brought suit against Suzuki (Japan) and the U.S. Suzuki Motor Corporation in California state court, and was granted a preliminary injunction restraining the Suzuki companies from breach of the Option and License Agreement and requiring them to comply with the confidentiality terms thereof. At Suzuki's request the state court declined to enforce the injunction after U.S. Suzuki sued Richardson in federal court, seeking a declaratory judgment of invalidity and non-infringement of Richardson's '332 patent.

In 1982 Richardson filed a patent infringement action against the Suzuki companies and others. (Only the Suzuki companies remain as parties.) Richardson reasserted the state claims of breach of contract, breach of implied covenant of good faith and fair dealing, misappropriation of trade secrets, and fraud, and among other relief requested assignment of the patents obtained by Suzuki on the Alternate Shock Mount. Suzuki

counterclaimed for fraud and breach of contract by Richardson, based on asserted invalidity of the '332 patent.

The federal actions were consolidated and tried to a jury. After forty-seven days of a two-part trial the jury gave special verdicts on issues of liability and damages. The district court entered final judgment under Fed.R.Civ.P. 54(b) on the jury verdicts that the '332 patent was not invalid and was infringed by Suzuki, that nine of Richardson's eleven asserted trade secrets were not trade secrets, and that Richardson was not entitled to assignment of the Tamaki/Suzuki patents on the Alternate Shock Mount. The court also entered final judgment on the jury verdicts of damages for patent infringement and for Suzuki's use of certain of Richardson's information that the jury found were not trade secrets. The court denied prejudgment interest and attorney fees, and refused to grant an injunction.

The district court denied most of the parties' post-trial motions, but granted Suzuki's motion for a new trial on three issues that the jury had decided in favor of Richardson, upholding two of the eleven asserted trade secrets, finding fraud on the part of Suzuki, and assessing damages for fraud. The district court then entered a supplemental final judgment for immediate appeal of the issues that the court intended to retry, and certified three specific questions on these and related issues.

### Validity of Richardson's '332 Patent

Suzuki asserts on appeal the invalidity of claim 9 on grounds of anticipation (35 U.S.C. §102) and obviousness (35 U.S.C. §103).<sup>3</sup> The district court, stating that questions of patent validity must be decided by the court, told the jury that its verdicts on this issue were advisory. Nevertheless the court duly entered the jury verdicts, including the answer YES to the question: "Under the facts and law as you believe that you understand them, do you find Claim 9 of the Richardson Patent to be valid?" The court entertained, and denied, post-trial motions for judgment n.o.v. and for a new trial on the question of validity. The court also independently decided the question, upholding validity of the '332 patent.

The record provided to us doesn't show the origin of this discredited procedure of advisory

<sup>3</sup> The additional aspects of adequacy of disclosure (35 U.S.C. §112) and unenforceability for inequitable conduct, both decided in favor of Richardson, have not been appealed.

ry verdicts, or whether. In *Perkin-Elmer Co. Corp.*, 732 F.2d 888, 669, 674 n.5 (Fed. C. U.S. 857 [225 USPQ] served that:

The view suggested in *Proof Corp.*, 688 F.2d 1182, cert. den. (1983)), that a jury's verdict is at best advisory, is not a basis for JNOV under Fed. R. Civ. P. 60(b). These motions are denied.

Moreover, use of a jury is not limited to actions not triable by a court (emphasis in original). In a similar circumstance, the court and the jury in the same jury question (of willfulness of infringement). "[a]ll fact findings are advisory, unless removed from jury." *Bentley Laboratories, Inc.*, 1568, 230 USPQ 11, cert. denied, 479 U.S. 1011.

[1] It is established that the questions presented, either as separate or as part of the same jury question, are of the same nature, which may be decided by a jury. *Connell v. Sea*, 722 F.2d 1542, 1547, 22 USPQ2d 1183, 1187 (Cir. 1983).

No warrant appears from the submission of legal patent cases from the Federal Circuit made in other cases as the Seventh Circuit in *Verdega Oil Co. of California*, 1051, 1052 USPQ2d 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 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ry verdicts, or whether either party objected. In *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 895 n.5, 221 USPQ 669, 674 n.5 (Fed. Cir.), *cert. denied*, 469 U.S. 857 [225 USPQ 792] (1984), we observed that:

The view suggested in *Sarkisian /v. Winn-Proof Corp.*, 688 F.2d 647, 651, (9th Cir. 1982), *cert. denied*, 460 U.S. 1052 (1983)], that a jury verdict on nonobviousness is at best advisory, would make charades of motions for directed verdict or JNOV under Fed.R.Civ.P. 50 in patent cases. These motions apply only to binding jury verdicts.

Moreover, use of an advisory jury is limited to actions not triable of right by a jury. (emphasis in original, citations omitted). In a similar circumstance wherein the trial court and the jury independently decided the same jury question (in that case the question of willfulness of infringement) we remarked that "[a]ll fact findings of a jury are non-advisory, unless made in an area expressly removed from jury verdict." *Shiley, Inc. v. Bentley Laboratories, Inc.*, 794 F.2d 1561, 1568, 230 USPQ 112, 115 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 1087 (1987).

[1] It is established that the jury may decide the questions of anticipation and obviousness, either as separate special verdicts or en route to a verdict on the question of validity, which may also be decided by the jury. *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1547, 220 USPQ 193, 197 (Fed. Cir. 1983):

No warrant appears for distinguishing the submission of legal questions to a jury in patent cases from such submissions routinely made in other types of cases. So long as the Seventh Amendment stands, the right to a jury trial should not be rationed, nor should particular issues in particular types of cases be treated differently from similar issues in other types of cases.

See also, e.g., *Vieau v. Japax, Inc.*, 823 F.2d 1510, 1515, 3 USPQ2d 1094, 1098 (Fed. Cir. 1987); *Verdegaal Brothers Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1052 (Fed. Cir.), *cert. denied*, 108 S.Ct. 95 (1987); *Data Line Corp. v. Micro Technologies, Inc.*, 813 F.2d 1196, 1200, 1 USPQ2d 2052, 2054 (Fed. Cir. 1987); *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1571, 1 USPQ2d 1081, 1085 (Fed. Cir. 1986); *DMI, Inc. v. Deere & Co.*, 802 F.2d 421, 425-27, 231 USPQ 276, 279-80 (Fed. Cir. 1986); *Mainland Industries, Inc. v. Standal's Patents Ltd.*, 799 F.2d 746, 747-48, 230 USPQ 772, 773 (Fed. Cir. 1986); *Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc.*, 750

F.2d 1552, 1560, 224 USPQ 259, 263 (Fed. Cir. 1984); *Quaker City Gear Works, Inc. v. Skil Corp.*, 747 F.2d 1446, 1454-55, 223 USPQ 1161, 1165-66 (Fed. Cir. 1984); *cert. denied*, 471 U.S. 1136 (1985); *Weinar v. Rollform Inc.*, 744 F.2d 797, 805, 223 USPQ 369, 372 (Fed. Cir. 1984), *cert. denied*, 470 U.S. 1084 (1985); *Perkin-Elmer Corp.*, 732 F.2d at 894-95, 221 USPQ at 674; *Envirotech Corp. v. Al George, Inc.*, 730 F.2d 753, 758, 221 USPQ 473, 477 (Fed. Cir. 1984); *Railroad Dynamics, Inc. v. A. Stucki Company*, 727 F.2d 1506, 1512-13, 220 USPQ 929, 935 (Fed. Cir.), *cert. denied*, 469 U.S. 871 [224 USPQ 520] (1984); *White v. Jeffrey Mining Mach. Co.*, 723 F.2d 1553, 1558, 220 USPQ 703, 705 (Fed. Cir. 1983) ("Submission of such a question of law [obviousness] to a jury, accompanied by appropriate instructions, is proper."), *cert. denied*, 469 U.S. 825 (1984). See generally, H.T. Markey in *On Simplifying Patent Trials*, 116 F.R.D. 369, 370 (1987) ("There is neither reason nor authority for employing in a patent trial procedures and practices different from those employed in any other civil trial. Indeed, reason and authority mandate the contrary.")

Although the district court and the jury reached the same result, the standards by which appellate courts review the judgment differ, depending on whether it arose from a jury or a bench trial. *District of Columbia v. Pace*, 320 U.S. 698, 701 (1944) ("findings of fact by an equity court and the verdict of a jury have from time immemorial been subject to different rules of finality"). When the judgment arises from a jury verdict, the reviewing court applies the reasonable jury/substantial evidence standard: a standard that gives greater deference to the judgment simply because appellate review is more limited, compared with review of a trial judge's decision. *Id.* at 702. As summarized in *Lavender v. Kurn*, 327 U.S. 645, 653 (1946), "the appellate court's function is exhausted when that evidentiary basis [of the jury's verdict] becomes apparent, it being immaterial that the court might draw a contrary inference or feel that another conclusion is more reasonable." See generally M.B. Louis, *Allocating Adjudicative Decision Making Authority Between the Trial and Appellate Levels: A Unified View of the Scope of Review, The Judge/Jury Question, and Procedural Discretion*, 64 N.C. L.Rev. 993 (1986).

The parties do not take a position on the district court's procedure, but appear to recognize that the issue of validity was properly for jury determination, for neither party refers to the district court's explanation of its

### '332 Patent

ne invalidity of participation (35 ss (35 U.S.C. ting that ques- be decided by its verdicts on evertheless the erdicts, includ- estion: "Under lieve that you Claim 9 of the id?" The court st-trial motions new trial on the rt also independ- upholding valid-

oesn't show the edure of adviso-

lequacy of dislo- enforceability for d in-favor of Rich-

independent determination of the question of obviousness.

In the interest of reaching an end to this protracted litigation, we have reviewed the judgment on the terms on which it reaches us. We have determined first whether Suzuki met its burden of showing on appeal that no reasonable jury could have reached the verdict of "valid" on the evidence before it. *Allen Organ Co. v. Kimball Int'l, Inc.*, 839 F.2d 1556, 1566, 5 USPQ2d 1769, 1777 (Fed. Cir.), *cert. denied*, 109 S.Ct. 132 (1988); *DMI, Inc. v. Deere & Co.*, 802 F.2d 421, 425, 231 USPQ 276, 278 (Fed. Cir. 1986); *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 618-19, 225 USPQ 634, 636 (Fed. Cir.), *cert. dismissed*, 474 U.S. 976 (1985). Then, on the premise that the parties may have waived their right to a jury trial on this question by failure to object to the district court's procedure, we have considered whether the district court's independent judgment of validity may be sustained, on the standards applicable thereto. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566-68, 1 USPQ2d 1593, 1595-97 (Fed. Cir.) (obviousness determination in bench trial reviewed as a question of law based on underlying facts), *cert. denied*, 107 S.Ct. 2187 (1987).

The court correctly instructed the jury that invalidity must be proved by clear and convincing evidence, referring to the presumption of validity. *Perkin-Elmer Corp.*, 732 F.2d at 894, 221 USPQ at 674; *Jamesbury Corp. v. Litton Industrial Products, Inc.*, 756 F.2d 1556, 1559, 225 USPQ 253, 255 (Fed. Cir. 1985); *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360, 220 USPQ 763, 771 (Fed. Cir.), *cert. denied*, 469 U.S. 821 [224 USPQ 520] (1984).

#### A. Anticipation

The district court correctly instructed the jury that an invention is anticipated if the same device, including all the claim limitations, is shown in a single prior art reference. Every element of the claimed invention must be literally present, arranged as in the claim. *Perkin-Elmer Corp.*, 732 F.2d at 894, 221 USPQ at 673; *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771-72, 218 USPQ 781, 789 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 [224 USPQ 520] (1984). The identical invention must be shown in as complete detail as is contained in the patent claim. *Jamesbury Corp.*, 756 F.2d at 1560, 225 USPQ at 256; *Connell*, 722 F.2d at 1548, 220 USPQ at 198.

As prior art, Suzuki relied on the motorcycle suspensions described in certain patents to Downs and Warner, and on the race car wheel suspensions described for Tyrrell and McLaren race cars in two Road and Track magazine articles. Witnesses explained to the jury the similarities and differences between the invention of the '332 patent and each prior art reference. For example, the Downs suspension has a spring element that is rigidly attached to the motorcycle frame and does not pivot as is required by claim 9 of the '332 patent. The Warner reference shows a suspension having a bell crank that is pivotally mounted to the motorcycle frame but not at an intermediate point, whereas Richardson requires a mid-point pivot of the bell crank to the frame. Neither Downs nor Warner describes a rising rate. The magazine articles describe a four wheel racing car suspension system having a linkage-generated variable rising rate incorporating a bell crank, but instead of the swing arm of Richardson's motorcycle suspension, the race car systems use an A-shaped arm mounted to the side of an upright wheel; and the bell crank and linkage in the race car system is located beside the wheel, rather than in front of the wheel as in Richardson's motorcycle system.

Witnesses testified that rising rate in motorcycles had previously been obtained only by progressively wound springs and gas operated shock absorbers. Suzuki argued that rising rate is inherent in the Downs and Warner motorcycle suspensions and expressly described for race cars in the magazine articles, and also that rising rate is merely a statement of function, and thus should not be a basis for distinction from the prior art.

The jury found that Downs did not "disclose each and every element of the Richardson Claims 1 and 9 or their equivalent". For the Warner reference, the jury could not reach a unanimous verdict on this same question, but answered NO to the question whether "the respective elements of Warner function in substantially the same way as the corresponding elements in Richardson to produce substantially the same results". The jury found that the race car suspensions did "disclose each and every element of the Richardson Claims 1 and 9 or their equivalent", but did not reach a unanimous verdict as to whether they "function in substantially the same way as the corresponding elements in Richardson to produce substantially the same results."

The jury had erroneously been instructed that anticipation may be shown by equivalents, a legal theory that is pertinent to obviousness under Section 103, not to antici-

pation under Section 103. *Inc. v. Bariant, Inc.*, 1 USPQ2d 1766, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 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pation under Section 102. *Lewmar Marine, Inc. v. Barent, Inc.*, 827 F.2d 744, 747-48, 3 USPQ2d 1766, 1768 (Fed. Cir. 1987), cert. denied, 108 S.Ct. 702 (1988); *Connell*, 722 F.2d at 1548; 220 USPQ at 198. The jury requested a definition of "equivalent" during its deliberations, and was given the Webster's dictionary definition "corresponding or virtually identical, especially in effect or function." This narrow definition, which does not accord with that of *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 608 [85 USPQ 328, 330] (1950), may have minimized the legal error in the instructions. In any event, the erroneous inclusion of equivalents in the anticipation inquiry favored Suzuki. The jury nonetheless answered YES to the special verdict: "Under the facts and law as you believe that you understand them, do you find Claim 9 of the Richardson Patent to be valid?"

[2] On the totality of the evidence and in light of the jury instructions and answers, we conclude that a reasonable jury could have found that the patent was not invalid on grounds of anticipation. *Perkin-Elmer Corp.*, 732 F.2d at 894, 221 USPQ at 673-74 (review of presumed jury finding that anticipation not proved, based on jury verdict of validity).

Reviewing the analysis and decision of the district court, based on the same prior art, we discern no clear error in the court's conclusion that claim 9 was not invalid.

We affirm that claim 9 was not proved invalid on the ground of anticipation.

#### B. Obviousness

The issue of obviousness was vigorously litigated, Suzuki relying on the same Downs and Warner patents and magazine articles. The record shows that there was extensive testimony concerning the differences between Richardson's suspension and the prior art. Suzuki argued at trial, and repeats on this appeal, that these differences are trivial mechanical expedients.

The jury, among its special verdicts on the *Graham* factors, found that a person of ordinary skill in the pertinent art could be any of: (1) a motorcycle mechanic without formal technical education, (2) a person with experience in working on suspension systems for racing automobiles, but without formal technical training, (3) suspension system instructors, (4) professional motorcycle riders, and (5) someone possessing above-average mechanical skills. Suzuki argues that such a person is of generally high mechanical skill, and to such a person Richardson's rising rate

motorcycle suspension would have been an obvious "adaption" of the race car suspension systems, which "suggests itself quite plainly, since Downs and Warner incorporate bell cranks in their respective suspensions."

The jury was unable to reach a unanimous verdict on the question of whether a person of the level of skill found by the jury, presented with the problem and being familiar with all the prior art including these four specific references, but unaware of Richardson's device, would be "led to do" what Richardson did. In response to the ultimate question, as we have observed, the jury reached the unanimous verdict that "Under the facts and law as you believe that you understand them", claim 9 was "valid". The district court entered judgment on the jury verdicts, independently held the patent valid, and denied Suzuki's motions for judgment n.o.v. and for a new trial on the issue of validity.

The question for the jury was whether the challenger met the burden of proving invalidity by clear and convincing evidence; and the question on review is whether reasonable jurors could have concluded that the challenger failed to meet that burden. *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1571, 1 USPQ2d 1081, 1085 (Fed. Cir. 1986); *Perkin-Elmer Corp.*, 732 F.2d at 894-95, 221 USPQ at 674. The jury's lack of unanimity on certain special verdicts can reasonably be taken to mean, as the district court held, that invalidity had not been proved by clear and convincing evidence.

[3] Our review shows that there was substantial evidence on which reasonable jurors could have concluded that claim 9 had not been proved invalid for obviousness, and thus reached the verdict of "valid". Although the district court erred in its belief that obviousness could only be presented to the jury for an advisory verdict, we may view the court's agreement with the jury verdict of validity as supporting the court's denial of Suzuki's post-trial motions for judgment n.o.v. and for a new trial. *Perkin-Elmer Corp.*, 732 F.2d at 895, 221 USPQ at 674-75. However it is viewed procedurally, no reversible error has been shown in the court's conclusion that obviousness had not been proved and that claim 9 was not invalid.

The judgment of validity is affirmed.

## II

### Infringement

Richardson bore the burden of proving infringement by a preponderance of the evi-

dence. The district court correctly stated that the jury was the finder of the fact of infringement.

The jury rendered special verdicts as to the Suzuki motorcycles before it, Model M having the Richardson/Cazort Alternate Shock Mount and Model C having the "criss-cross" connection added by Suzuki, as follows:

9(a). Do defendant Suzuki's motorcycles of the Model M type . . . infringe Claim 9 of the plaintiff's patent?

Answer: YES, WITH THE RISING RATE

9(b). Do defendant Suzuki's motorcycles of the Model C type . . . infringe Claim 9 of the plaintiff's patent?

Answer: YES, WITH THE RISING RATE

In subparts 9(a)(2) and 9(b)(2) of the special verdict the jury answered YES to the question whether the Suzuki motorcycles produce substantially the same rising rate as taught in Richardson's patent.

The principal question on appeal is the meaning and effect of the jury answers to subparts (1) of the special verdict, which were directed "in particular" to the Alternate Shock Mount and the criss-cross modifications:

9(a)(1). In particular, is the defendant's linkage equivalent to the plaintiff's, bearing in mind that the bottom of the spring in the former is affixed to the swing arm rather than to the frame?

Answer: NO

9(b)(1). In particular, is the defendant's linkage equivalent to the plaintiff's, in light of the "criss-cross" of the connecting rods and the bell crank in the defendant's model, as well as the spring attachment to the swing arm, as compared with the plaintiff's Claim 9?

Answer: NO

The district court entered judgment of infringement in favor of Richardson and denied post-trial motions by both sides, including a motion by Richardson to reopen the record in order to present evidence on the doctrine of equivalents. The district court stated that the jury verdicts mean that "infringement is limited to 'rising rate'" and that the Suzuki and Richardson linkages are not equivalent.

Suzuki argues that special verdicts 9(a)(1) and 9(b)(1) require judgment of non-infringement; or, as a minimum, that these verdicts are inconsistent with the verdicts of infringement in 9(a) and 9(b), such that a new trial is required of the entire issue. Richardson states that the verdicts can be

understood, when viewed in light of the jury instructions, in a way that supports the judgments of infringement. Suzuki did not request a new trial on the basis of inconsistent verdicts at the time the judgments were entered, while Richardson moved, unsuccessfully, to amend or delete verdicts 9(a)(1) and 9(b)(1). Each party asserts that any inconsistency should be resolved in its favor.

The Ninth Circuit, in accordance with the general rule, requires trial and appellate courts to seek reconciliation of apparently inconsistent verdicts:

When faced with a claim that verdicts are inconsistent, the court must search for a reasonable way to read the verdicts as expressing a coherent view of the case, and must exhaust this effort before it is free to disregard the jury's verdict and remand the case for a new trial.

*Toner v. Lederle Laboratories*, 828 F.2d 510, 512 (9th Cir. 1987), cert. denied, 108 S.Ct. 1122 (1988) (citing *Gallick v. Baltimore & Ohio R.R.*, 372 U.S. 108, 119 (1963), also citing *Atlantic & Gulf Stevedores, Inc. v. Ellerman Lines, Ltd.*, 369 U.S. 355, 364 (1962) and *Blanton v. Mobil Oil Corp.*, 721 F.2d 1207, 1213, (9th Cir. 1983), cert. denied, 471 U.S. 1007 (1985)). See also *Allen Organ Co.*, 839 F.2d at 1563, 5 USPQ2d at 1775 (the appellate court must make every effort to harmonize the jury's answers).

The district court did not find the special verdicts inconsistent, apparently in the belief that the jury limited infringement to the rising rate provision of claim 9 but not the other claim clauses. This accords with the court's statement to the jury that the infringement was "minor" because it was limited to the rising rate. This interpretation pleased neither party. If we have correctly understood it, it is incorrect as a matter of law.

"We are bound to find the special verdicts consistent if we can do so under a fair reading of them." *Toner*, 828 F.2d at 512. A fair reading of the special verdicts results from simply applying the rule that "[t]he consistency of the jury verdicts must be considered in light of the judge's instructions to the jury". *Toner*, 828 F.2d at 512. The instructions on infringement, and the specific questions asked by special verdict, were designed to resolve the issues raised at trial. There was testimony on both sides of Suzuki's assertion that its suspension was not the same as Richardson's because it produced a different rising rate. We referred *supra* to special verdicts 9(a)(2) and 9(b)(2):

9(a)(2). Does defendant's Model M produce rising rate substantially the same as

the rising rate productions of the plaintiff's

Answer: YES

9(b)(2). Does defendant's Model C produce rising rate productions of the plaintiff's

Answer: YES

Another special verdict section asked the jury:

11. Does claim 9 of the plaintiff describe the invention in terms of what the invention is, rather than in terms of physical structure?

Answer: NO

We conclude that the phrase "the rising rate" in verdict 9 is the jury's response to the question rather than as a finding of fact. The rising rate claim limitation, embodied in the Suzuki patent,

We discern no support in the district court's conclusion that 9(b) meant that the only area of infringement was the rising rate. Responding to every element of claims 1 and 9 was identical. The accused embodiment in the accused was no real dispute that the elements in these claim clauses counted), all but one. The dispute centered on the attachment of the spring. "Spring means having secured to said frame a clause affected by the Alternate Shock Mount. In the Alternate Shock Mount, the spring is attached to the swing arm that in turn is attached to the frame, instead of being attached directly to the frame as specified in the specification.

Richardson argues that the jury either directly or indirectly found that the rising rate of the claim is not equivalent to the doctrine of equivalents. *Tank*, 339 U.S. at 608. These securements are structures are substantially the same way.

The jury had been given a definition that "equivalent" means "substantially the same effect or function". The jury was forced by the phrasing in 9(a)(1), wherein instructed the jury on the

the rising rate produced under the teachings of the plaintiff's patent?

Answer: YES

9(b)(2). Does defendant's Model C produce rising rate substantially the same as the rising rate produced under the teachings of the plaintiff's patent?

Answer: YES.

Another special verdict in the infringement section asked the jury:

11. Does claim 9 of the Richardson Patent describe the invention of a rising rate in terms of what the invention will do rather than in terms of physical arrangement?

Answer: NO

We conclude that the answer "yes, with the rising rate" in verdicts 9(a) and 9(b) is the jury's response to Suzuki's argument, rather than as a finding that only the rising rate claim limitation, and no other, is embodied in the Suzuki suspensions.

We discern no support in the record for the district court's conclusion that verdicts 9(a) and 9(b) meant that the rising rate was the only area of infringement. Structure corresponding to every element of every clause of claims 1 and 9 was identified by witnesses as embodied in the accused motorcycles. There was no real dispute that of the nine or eleven elements in these claims (depending on how counted), all but one were literally present. The dispute centered on one element, the attachment of the spring in the claim clause "spring means having a first end pivotally secured to said frame", since this was the clause affected by the modifications of the Alternate Shock Mount and the criss-cross. In the Alternate Shock Mount, as we have discussed, the spring is pivotally secured to a swing arm that in turn is pivotally secured to the frame, instead of being pivotally secured directly to the frame as is shown in the '332 specification.

Richardson argues that the spring can be either directly or indirectly pivotally secured to the frame, without avoiding literal infringement of the claim. Richardson alternatively argues that on a correct definition of the doctrine of equivalents, citing *Graver Tank*, 339 U.S. at 608 [85 USPQ at 330], these securements are equivalent because the structures are substantially the same and perform substantially the same function in the same way.

The jury had been given the dictionary definition that "equivalent" means "corresponding or virtually identical, especially in effect or function". This definition was reinforced by the phrasing of verdicts 9(a)(1) and 9(b)(1), wherein the question itself instructed the jury on the difference between

the linkages, while remaining silent on the similarities.

This presentation was highly prejudicial. Indeed, these verdicts well illustrate the truism that the way a question is asked can direct the answer. "The decision to submit interrogatories, and the precise language in which they are couched, can have an untoward effect on a verdict, if certain elements of the trial or the evidence are thereby overly emphasized in the jury's mind." *Weinar v. Rollform Inc.*, 744 F.2d 797, 809, 223 USPQ 369, 376 (Fed. Cir. 1984), *cert. denied*, 470 U.S. 1084 (1985).

Further, and equally prejudicial, special verdicts 9(a)(1) and 9(b)(1) isolated this specific claim element so that it was removed from the perspective that is obtained only when the claimed invention is viewed in its entirety. See, e.g., *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1363, 219 USPQ 473, 482 (Fed. Cir. 1983). We recently reemphasized in *United States Steel Corp. v. Phillips Petroleum Co.*, No. 88-1166, -1167, -1168, -1169, -1170, -1171, slip op. at 13-14 [9 USPQ2d 1461] (Fed. Cir. Jan. 10, 1989), in discussing *Graver Tank*, that there is no error in considering "the principle of the claimed invention".

A device that embodies improvements on a claimed structure does not automatically avoid the reach of the claim. See, e.g., *Atlas Powder Co. v. E.I. du Pont de Nemours & Co.*, 750 F.2d 1569, 1580, 224 USPQ 409, 417 (Fed. Cir. 1984) (separately patentable improvement may also be an equivalent under the doctrine of equivalents); *A.B. Dick Co. v. Burroughs Corp.*, 713 F.2d 700, 703 218 USPQ 965 967-68 (Fed. Cir. 1983) (infringement not avoided "merely by adding elements"), *cert. denied*, 464 U.S. 1042 (1984). Each case must be decided on its particular facts, viewing the changes in the accused structure in light of the claimed invention. See generally *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934-35, 4 USPQ2d 1737, 1739 (Fed. Cir. 1987), *cert. denied*, 108 S.Ct. 1226 (1988), and *cert. denied*, 108 S.Ct. 1474 (1988); *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 805 F.2d 1558, 1569-70, 231 USPQ 833, 840 (Fed. Cir. 1986), *reh'g denied*, 846 F.2d 1369, 6 USPQ2d 1886 (Fed. Cir. 1988).

[4] We conclude that the jury verdicts, viewed in light of the instructions, held that the Suzuki motorcycles with a rising rate infringed claim 9. We also conclude that on correct instructions no reasonable jury could have found that the claimed invention and the accused structures are not equivalent, on the established facts of record, applying the

correct law of *Graver Tank*. See *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 252 (1986) ("The mere existence of a scintilla of evidence in support of the plaintiff's position will be insufficient; there must be evidence on which the jury could reasonably find for the plaintiff."); *Pullman-Standard v. Swint*, 456 U.S. 273, 291-92 (1982) ("where findings [by the district court] are infirm because of an erroneous view of the law, a remand is the proper course unless the record permits only one resolution of the factual issue"); *Dana Corp. v. IPG Limited Partnership*, 860 F.2d 415, 419, 8 USPQ2d 1692, 1696 (Fed. Cir. 1988) (when there are sufficient established facts of record, appellate court has discretion to determine the merits of JNOV motion.)

The jury verdicts of infringement are supported by substantial evidence, and are upheld. The judgment of infringement is affirmed.

### III

#### Damages for Patent Infringement

As damages for patent infringement the jury assessed a royalty of fifty cents per motorcycle. Richardson states that this royalty is unreasonably low, and resulted from erroneous and prejudicial jury instructions. We review the award on the reasonable jury/substantial evidence standard. *Shatterproof Glass Corp.*, 758 F.2d at 627-28, 225 USPQ at 643-44.

The court told the jury: "Now, I will sustain, I will uphold your verdict [of infringement], but in determining damages and determining any royalty, it seems to me that you must consider that the infringement was a relatively minor infringement." This instruction derived, as we have discussed, from the erroneous interpretation of the verdicts as limited to the "rising rate" clause. We must determine whether this erroneous instruction was prejudicial to the jury's assessment of damages. The Ninth Circuit has stated that "we will reverse a judgment because of a mistake in jury instructions only if the error was prejudicial." *Smiddy v. Varney*, 665 F.2d 261, 265 (9th Cir. 1981), cert. denied, 459 U.S. 829 (1982).

35 U.S.C. §284 provides that damages shall be "adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer". *Fromson v. Western Litho Plate and Supply Co.*, 853 F.2d 1568, 1574, 7 USPQ2d 1606, 1612 (Fed. Cir. 1988). The jury was told that a royalty of \$2.00 per motorcycle with an an-

nual minimum of \$70,000 had been agreed to by Suzuki and Richardson in the Option and License Agreement. There was testimony of much higher royalties paid by others for similar contributions to motorcycles. Suzuki presented testimony that the \$2.00 in the agreement does not apply, but should be the starting point for reducing the royalty because the infringement was minor.

[5] We must assume that the jury followed the court's instruction that the infringement was minor. That instruction was a misinterpretation of the jury verdict of infringement, and it usurped the role of the jury. Absent this prejudicial instruction there was no reasonable basis on which reasonable jury could have found that fifty cents was a reasonable royalty.

The judgment of damages for patent infringement is vacated. We remand for retrial of the question.

### IV

#### Richardson's Technical Information

Issues relating to Richardson's technical information were presented at trial on the legal theories of breach of contract and the tort of misappropriation of trade secrets. The district court concentrated on the tort issues in presentation to the jury, apparently accepting Suzuki's position that it had complied with its contractual obligations to Richardson. The court thus required that Richardson prove the existence of legally protectible trade secrets and their misappropriation by Suzuki.

In the only special verdict on the contract issues, the jury found that Suzuki did not violate its duty of good faith and fair dealing in its relationship with Richardson. The jury instructions on the contractual relationship, however, are pertinent to, and intertwined with, the trade secret issues.

#### A. The Contractual Relationship

In matters of contract law and interpretation we apply the discernable law of the state of California. *Universal Gym Equipment, Inc. v. ERWA Exercise Equipment Ltd.*, 827 F.2d 1542, 1550, 4 USPQ2d 1035, 1040 (Fed. Cir. 1987). At trial Richardson pressed, unsuccessfully, the California law that a covenant of good faith and fair dealing is implied between parties to a contract. *Seaman's Direct Buying Service, Inc. v. Standard Oil Co.*, 38 Cal.3d 752, 768, 686 P.2d 1158, 1166, 206 Cal.Rptr. 354, 363 (1984) ("It is well settled that, in California, the law implies in every contract a covenant

of good faith and fair dealing (original)).

The contract between Suzuki was explained at a clause wherein Suzuki agreed to disclose the "technical know-how, inventions, use data, and information" that it received discussing whether Suzuki's post-contract use of information, the district court told the jury that Suzuki was to use the most efficient means they got it from plaintiff's "valid trade secrets" without contractual restraints:

And then after Suzuki took a license, of course, supposed to use the best secrets. That's what they once again, you're going to mine whether these are trade secrets. To what the defendant use them, to what the defendant otherwise them.

Now, some of these to the best alignments it seems incongruous to want they cannot use the best was intentionally plaintiff, and even the notion by the defendant revealed the best as the would.

Were the defendant using the best or were it something less efficient. the defendants not being the most efficient means got it from the plaintiff. The court later qualified referring to reverse engineering proper — although it is far reasonable jury would have the court's instructions:

But on further reflection knowledge that if you confidential relationship prohibited Suzuki from plaintiff's trade secrets, technical know-how, inventions the plaintiff gave them, the option, if you find it true, I suppose it would Suzuki to reverse engineer son's prototypes, or from other information that he

The defense of reverse engineering not apply to information disclosed or whereas here it given under a contract.



of good faith and fair dealing." (Emphasis in original)).

The contract between Richardson and Suzuki was explained at trial, including the clause wherein Suzuki agreed not to use or disclose the "technical information, know-how, inventions, use data, and design specifications" that it received from Richardson. In discussing whether Suzuki was restrained in its post-contract use of Richardson's information, the district court at first instructed the jury that Suzuki was entitled by law "to use the most efficient means, even though they got it from plaintiff", stating that only "valid trade secrets" were subject to the contractual restraints:

And then after Suzuki's election not to take a license, of course, they were not supposed to use the plaintiff's trade secrets. That's what the contract says. And once again, you're going to have to determine whether these eleven were valid trade secrets. To what extent did the defendant use them, to what extent would the defendant otherwise have developed them.

Now, some of these trade secrets refer to the best alignments and designs. Well, it seems incongruous to say to the defendant they cannot use the best because the best was intentionally disclosed by the plaintiff, and even though experimentation by the defendant surely would have revealed the best as the patent says that it would.

Were the defendants precluded from using the best or were they obliged to use something less efficient. I can't conceive of the defendants not being entitled to use the most efficient means, even though they got it from the plaintiff.

The court later qualified this position by referring to reverse engineering as being improper — although it is far from clear what a reasonable jury would have understood from the court's instructions:

But on further reflection, I have to acknowledge that if you find there was a confidential relationship or contract that prohibited Suzuki from using the plaintiff's trade secrets, technical information or know-how, inventions or use data that the plaintiff gave them, unless it exercised the option, if you find those things to be true, I suppose it would be improper for Suzuki to reverse engineer from Richardson's prototypes, or from trade secrets or other information that he gave them.

The defense of reverse engineering does not apply to information received in confidence or whereas here the information is given under a contract.

Reviewing these instructions in the context of the contract and trade secret questions that were before the jury, we conclude that the jury was incorrectly instructed on the law. See *Bulgo v. Munoz*, 853 F.2d 710, 714 (9th Cir. 1988) (quoting *Los Angeles Memorial Coliseum Comm'n v. National Football League*, 726 F.2d 1381, 1398 (9th Cir.), cert. denied, 469 U.S. 990 (1984)) (instructions reviewed to determine "whether, viewing the jury instructions as a whole, the trial judge gave adequate instructions on each element of the case to ensure that the jury fully understood the issues.")

[6] In *Universal Gym Equipment*, 827 F.2d at 1549, 4 USPQ2d at 1040, we affirmed liability under California law based on breach of contract, when the parties contracted to limit the use by the recipient of "features, designs, technical information, or know-how" disclosed under the contract. We also affirmed that such a contractual arrangement is not incompatible with the patent law, *id.* at 1550, 4 USPQ at 1041, an issue on which the district court in Richardson's case also appears to have been misled, and to have misled the jury. See *Components for Research, Inc. v. Isolation Products, Inc.*, 241 Cal.App.2d 726, 730, 50 Cal.Rptr. 829, 832 (Cal. Dist.Ct.App. 1966) ("The judgment here but affords protection against the use of plaintiff's trade secrets by those to whom they had been disclosed in confidence. Whether the idea was patented or not, plaintiff is entitled to such protection").

The district court erred in law, in limiting the scope of protected information beyond that set forth in the contract, and in its instructions to the jury as to Suzuki's obligations. These errors are reflected in the trade secret issues.

#### B. The trade secret issues

The jury, despite the excessively restrictive instructions on what were trade secrets, found that certain items that Suzuki had received from Richardson were trade secrets and had been misappropriated, and assessed damages therefor. The jury also assessed damages for use by Suzuki of certain other items that did not "rise to the dignity of trade secrets", in the words of the special verdicts.

Richardson specified eleven items that he had disclosed to Suzuki under the contract, and that he asserted to be trade secrets; to wit: (1) the optimal characteristics of a motorcycle rear-wheel suspension shock absorber, showing three external adjustments, (2) engineering drawings of his proposed and furnished suspension systems, (3) 1978 and

1979 Suzuki motorcycles modified by Richardson with his rising rate suspension, (4) specific force-velocity curves needed to obtain the advantages of Richardson's invention in Suzuki's motorcycles, (5) design modifications to extend rear wheel travel over earlier rising-rate designs, (6) design of the Alternate Shock Mount including drawings and knowhow, (7) the optimum use and types of certain bearings in the suspension, (8) motorcycle testing and tuning criteria, (9) his bell crank designs and design criteria, (10) adjustments in the angles and dimensions of the parts of the suspension and their effect on performance, and (11) the straight line tubular motorcycle frame.

The California law of trade secrets follows the Restatement definition:

A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. . . . Generally it relates to the production of goods, as, for example, a machine or formula for the production of an article.

*By-Buk Co.*, 163 Cal.App.2d at 166, 329 P.2d at 152, 118 USPQ at 553, citing Restatement (First) of Torts, §757, comment b (1939). The court in *By-Buk Co.* reaffirmed "plaintiff's right not to have its [trade secret] processes wrongfully disclosed to others and used to its detriment." *Id.* at 167, 329 P.2d at 153, 118 USPQ at 553.

The burden of proof was placed on Richardson to prove that his information met the legal requirements of a protectible trade secret. *Forro Precision, Inc. v. International Business Machines Corp.*, 673 F.2d 1045, 1056-57, 215 USPQ 299, 305-6 (9th Cir. 1982). This in turn required "either a covenant or a confidential relationship" as a premise of relief. *Futurecraft Corp. v. Clary Corp.*, 205 Cal.App.2d 279, 283, 23 Cal.Rptr. 198, 207-208 (Cal. Dist.Ct.App. 1962) (discussing elements of trade secret protection). Richardson met this requirement through his contractual covenant.

The district court told the jury, several times, that because Suzuki might have developed or could have developed on its own the information it received from Richardson, such information can not be protected as a trade secret. The court said: "Now I think we must assume that the defendant could have accomplished whatever the plaintiff may have contributed toward the development of Models M and C." Whatever the validity of the proposed assumption as to Suzuki's abilities, the court's conclusion is contrary to California law:

It is not necessary in order that a process of manufacture be a trade secret that it be patentable or be something that could not be discovered by others by their own labor and ingenuity.

*By-Buk Co.*, 163 Cal.App.2d at 166, 329 P.2d at 152, 118 USPQ at 553. Nor does the possibility of independent discovery relieve Suzuki of liability:

"[S]ecret formulas and processes \* \* \* are property rights which will be protected by injunction, not only as against those who attempt to disclose or use them in violation of confidential relations or contracts express or implied, but as against those who are participating in such attempt with knowledge of such confidential relations or contract, though they might in time have reached the same result by their own independent experiments or efforts."

*Id.* at 167, 329 P.2d at 153, 118 USPQ at 553-54 (quoting *Herold v. Herold China & Pottery Co.*, 257 F. 911, 913 (6th Cir. 1919)). Indeed, Suzuki did not argue that it had actually developed on its own the information that it first received from Richardson. Although Richardson adduced evidence that Suzuki had been unable to solve this problem, it is not relevant what Suzuki might have been able to do on its own. Ninth Circuit law upholds trade secret status even had the same information been obtainable from other sources. *Clark v. Bunker*, 453 F.2d 1006, 1010, 172 USPQ 420, 423 (9th Cir. 1972) (trade secrecy "is not negated because defendant by an expenditure of effort might have collected the same information from sources available to the public.") (footnote omitted).

The court also erroneously instructed the jury that "slavish" copying is necessary for misappropriation, and that an exercise of independent judgment would remove the information from protection. The court instructed the jury to consider: "Were they secrets. And, second, did the defendants slavishly use them or did they make up their own minds." These views are contrary to California law. "[D]efendants cannot escape responsibility by showing that they have improved upon or modified the plaintiff's process." *By-Buk Co.*, 163 Cal.App.2d at 169, 329 P.2d at 154, 118 USPQ at 554. The court observed in *Sinclair v. Aquarius electronics, Inc.*, 42 Cal.App.3d 216, 222, 116 Cal.Rptr. 654, 659, 184 USPQ 682, 684 (Cal. Ct.App. 1974) that minor variations are to be expected.

Suzuki argued to the jury, and repeats on appeal, that information that Richardson developed after issuance of the '332 patent, including the Alternate Shock Mount, is

barred from trade secret status because it was generally disclosed or known to the public, and thus cause it merely imitative invention.

The legal status of improvements made after a patent has been filed is independent of or absence, of the patenting patent. The improvements may be separately preserved in confidence only in accordance with the law, and are protected against disclosure in accordance with the law. The court misstates the jury that the jury Richardson could have and legal protection of information on the patent.

So on the one hand, the ordinary person who takes this patent as a machine based upon hand, he says, how can he and the ability to trade secrets for work. Now, that constitutes up to you to determine Mr. Richardson's secrets things that a person skilled in the art do on his own.

The district court's phrase "do on his own" may be a misstatement of the law. It is not possible to do on its own what one has sought Richardson's secrets, data, and information, and agreed to respect the trade secret. This information is the eyes of the law, and is in accordance with law. *Oil Co. v. Bicon Co.*, 181 USPQ 673, 678 (9th Cir. 1976) (post-patent invention is entitled to protection for manufacturing). *Cal. App.3d at 225, 184 USPQ at 686* ("an invention in a does not reach"). *Ac Bat-Jac Tool Co.*, 261, 193 USPQ 24 (9th Cir. 1976) (post-patent invention is under trade secret). *Chek*, 209 F.2d 493, 122 (2d Cir. 1953) (improvement could have derived from patented patent).



barred from trade secret status because it was generally disclosed in Richardson's patent or known to the general public, or because it merely implements the patented invention.

The legal status of information and improvements made after a patent application has been filed is independent of the presence, or absence, of the patent application or ensuing patent. The information and improvements may be separately patentable; they may be preserved in confidence and disclosed only in accordance with agreement; and they are protected against misappropriation in accordance with the laws of contract and tort. The court misstated the law in telling the jury that the jury could decide whether Richardson could have both a valid patent and legal protection for later-developed information on the patented invention:

So on the one hand [Richardson] says the ordinary person skilled in the art can take this patent and use it and make a machine based upon it. But, on the other hand, he says, however, the experimentation and the ability to do this constitutes trade secrets for which you must pay me. Now, that constitutes a dilemma and it's up to you to determine the extent to which Mr. Richardson may claim as trade secrets things that the ordinarily prudent person skilled in the art should be able to do on his own.

The district court's phrase "should be able to do on his own" may explain its misperception of the law. It is not known what Suzuki was able to do on its own; for Suzuki not only sought Richardson's knowhow, improvements, data, and information, but also agreed to respect the confidentiality thereof. This information is intellectual property in the eyes of the law, and is protected in accordance with law. See generally *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 493 [181 USPQ 673, 682] (1974). See also *Components for Research, Inc.*, 241 Cal. App.2d at 730, 50 Cal.Rptr. at 832 (whether the product design was patented or not, plaintiff is entitled to trade secret protection for manufacturing process); *Sinclair*, 42 Cal. App.3d at 225, 116 Cal.Rptr. at 660, 184 USPQ at 686 ("Trade secret law encourages invention in areas where patent law does not reach"). *Accord Thermotics, Inc. v. Bat-Jac Tool Co., Inc.*, 541 S.W.2d 255, 261, 193 USPQ 249, 253 (Tex. Civ.App. 1976) (post-patent improvement protectable under trade secret law); *Franke v. Wiltschek*, 209 F.2d 493, 495, 99 USPQ 431, 433 (2d Cir. 1953) (immaterial that defendants could have derived trade secrets from expired patent).

[7] It is apparent that the court imposed a higher standard for trade secret status than is contained in California law. The court's instructions, commentary, and phrasing of the special verdicts not only placed a prejudicially heavy burden on Richardson, but also demeaned the information itself.

Despite this prejudicial environment, the jury found that items 5 and 6 were trade secrets and had been misappropriated by Suzuki, and assessed damages therefore. The jury also found that items 1-4 and 7-11 were not trade secrets, and that for some but not all of these items compensation should be awarded based on "benefit from the plaintiff's knowledge and from the time and effort expended by him".

The district court granted Suzuki's motion for a new trial with respect to items 5 and 6, and upheld the jury verdicts with respect to items 1-4 and 7-11.

### C. The new trial of items 5 and 6

The grant of a new trial is ordinarily not reviewable, but on this issue the district court entered final judgment for purposes of appeal, and certified three questions. The first certified question is:

1. Where the plaintiff's asserted trade secrets Nos. 5 and 6: (a) Actually valid proprietary trade secrets, as the jury found and awarded very substantial royalties; or (b) Did the plaintiff's contributions in these respects represent no more than the services of a skilled mechanic, which readily could have been duplicated by the defendant; and which entitled the plaintiff only to quantum meruit compensation, as the court believes; or (c) Were the plaintiff's contributions no more than those contemplated under the option agreement and paid for by the defendant, as the defendant contends?

We respond to this question: From the record before us the jury verdict that items 5 and 6 met the requirements for trade secret protection was supported by the great weight of the evidence. Richardson and Cazort testified about the design modifications that were the subject of item No. 5 and the Alternate Shock Mount subject of item No. 6. The Alternate Shock Mount was considered sufficiently novel and valuable that Suzuki included it in a patent application filed in Japan and later in the United States. The record does not negate the jury's determination of the value of this information. According to California law it is immaterial what Suzuki could have done, for it chose to use Richardson's information, which it obtained under restraint.

In further response, we remark that the relation between the parties, set by contract, was "a routine commercial arrangement wherein Richardson agreed to facilitate Suzuki's testing and evaluation of Richardson's invention. This did not convert Richardson's work in adapting his invention to Suzuki's motorcycle into the work of a hired technician whose work product was automatically owned by Suzuki. The proprietary nature of the work done and information provided by Richardson was established by agreement, as was the agreement that Suzuki would not use this information if it did not exercise its option.

[8] There was substantial evidence before the jury that the information on items 5 and 6 was not publicly known, that Suzuki agreed to receive and preserve it in confidence, and that the information fully satisfies the statutory and jurisprudential requirements for protectible trade secrets.

In order to vacate the jury's verdict upholding items 5 and 6 as trade secrets and grant a new trial thereon, the trial court must find that the jury's verdict "is contrary to the clear weight of the evidence, or is based upon evidence which is false, or to prevent, in the sound discretion of the trial judge, a miscarriage of justice." *Hanson v. Shell Oil Co.*, 541 F.2d 1352, 1359 (9th Cir. 1976), cert. denied, 429 U.S. 1074 (1977) (quoting *Moist Cold Refrigerator Co. v. Lou Johnson Co.*, 249 F.2d 246, 256, 115 USPQ 160, 168-69 (9th Cir. 1957), cert. denied, 356 U.S. 968 [117 USPQ 498] (1958)); *William Inglis & Sons Baking Co. v. ITT Continental Baking Co., Inc.*, 668 F.2d 1014, 1027 (9th Cir. 1981), cert. denied, 459 U.S. 825 (1982). It is insufficient that the district court would simply have reached a different verdict.

Our review requires determination of whether the district court abused its discretion in its decision to grant the new trial. *Id.* See *Transgo, Inc. v. Ajac Transmission Parts Corp.*, 768 F.2d 1001, 1014, 227 USPQ 598, 602 (9th Cir. 1985), cert. denied, 474 U.S. 1059 (1986) ("the grant or denial of either a motion for a new trial or a motion to amend the judgment must be reviewed on the basis of a determination of whether the district court abused its discretion.") See generally *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 756 F.2d 1574, 1581, 225 USPQ 357, 363 (Fed. Cir. 1985) ("Abuse of discretion may be established by showing that the district court either made an error of law, or a clear error of judgment, or made findings which were clearly erroneous.") The district court's statements, for example with respect to item

5, "I simply cannot conclude that that is a trade secret. It was an attempt to help Suzuki adapt the Richardson concept to the Suzuki machine . . .", reflect an error of law.

Despite the legal error in the instructions, as we have discussed, any prejudice resulting therefrom favored Suzuki, not Richardson. We conclude that the district court exceeded its discretionary authority in vacating the jury verdict and ordering a new trial. That action is reversed, and the jury verdict is reinstated as to items Nos. 5 and 6, including the damages assessed for items Nos. 5 and 6.

#### D. Items 1-4 and 7-11

For asserted trade secrets Nos. 1-4 and 7-11, the jury may well have been led by erroneous instructions into applying an incorrect legal standard, in finding that these items were not trade secrets. It appears, however, that Richardson did not move for judgment n.o.v. or a new trial on these verdicts. Although there is a hint in the post-trial colloquy that the court intended or was willing to retry all the trade secret issues along with items 5 and 6, this does not satisfy the rule, supported by logic, that the formalities of post-trial motions be respected. *Snellman v. Ricoh Co.*, 836 F.2d 528, 534, 5 USPQ2d 1341, 1346 (Fed. Cir. 1987) (applying Ninth Circuit law in holding that motions for judgment n.o.v. and for a new trial must be made). Thus we have no authority to review these verdicts.

By special verdict the jury was also asked to assess damages for Suzuki's use of the information encompassed in each of items 1-4 and 7-11, even if the information did not "rise to the dignity of trade secrets". The jury determined this sum for each item, some at \$0, the highest at \$25,000, for a total of \$104,000. The district court sustained this award, on a theory of "quantum meruit compensation". Both parties appeal this award, Richardson asserting its inadequacy, and Suzuki arguing that Richardson was fully paid for his information in the option agreement, and is not entitled to damages for Suzuki's use of any information received from Richardson.

We have rejected, as a matter of law, Suzuki's theory that it is entitled to use, free, the information disclosed by Richardson under the option agreement. Richardson's disclosures were made under terms that prohibited their use by Suzuki if the option was not exercised. This contract provision does not depend on whether the information is a trade secret, but only on whether it was previously known to Suzuki or generally known to the public, as discussed *ante*.

An appellate tribunal is abjured to mine whether a jury verdict sustained, on any reasonable theory, the successful party in the District Court sustain its judgment on any facts support in the record.")

[9] There was substantial evidence whereby a reasonable jury could have found the sums awarded by the jury. Indeed, Suzuki does not challenge the damage awards for items 1-4, arguing instead that nothing at all was awarded for items 5 and 6.

The judgment as to items 1-4 is affirmed, including damages assessed for these items in the total amount

#### V Injunction

The district court, having found that the Suzuki Full Patent infringed claim 9 of the denied Richardson's motion for summary judgment.

[10] Infringement having been found, it is contrary to the law of which the patent law partake patentee's right to exclude others from his property. 35 U.S.C. §261. "The patentee is entitled to the exclusive right to exclude others from making, using, or selling the invention within the United States or to others for that purpose." 35 U.S.C. §261. "The patentee is entitled to the exclusive right to exclude others from making, using, or selling the invention within the United States or to others for that purpose." 35 U.S.C. §261. "The patentee is entitled to the exclusive right to exclude others from making, using, or selling the invention within the United States or to others for that purpose." 35 U.S.C. §261.

It is the general rule that an injunction is not granted when the patentee has not shown that the defendant's use of the invention is an infringement of the patent. *Gore & Associates, Inc. v. Garfield, Inc.*, 718 F.2d 1275, 1281, 6 USPQ2d 1275, 1281 (Fed. Cir. 1988). Suzuki has such reason. This court stated in *ERTSON CO. v. UNITED STEEL INDUSTRIES, INC.*, 718 F.2d 384, 390, 2 USPQ2d 1111, 1117 (Fed. Cir. 1987), when review of the district court's judgment was granted *pendente lite*:

In matters involving patent infringement, the patentee is entitled to a permanent injunction if it has shown that the defendant's use of the invention is an infringement of the patent. *ERTSON CO. v. UNITED STEEL INDUSTRIES, INC.*, 718 F.2d 384, 390, 2 USPQ2d 1111, 1117 (Fed. Cir. 1987). This presumption of irreparable harm from the finite term of the patent expiration is not subject to rebuttal in passing litigation, and the passage of time does not constitute irreparable harm.

We observe that the '332 patent has less than four years, that litigation over eight years ago, and that the court remarked that further litigation could consume "several years."

Further, a misappropriation of trade secrets has no authorization of r

An appellate tribunal is abjured to determine whether a jury verdict can be sustained; on any reasonable theory. *Jaffke v. Kunham*, 352 U.S. 280, 281 (1957) ("A successful party in the District Court may sustain its judgment on any ground that finds support in the record.")

[9] There was substantial evidence at trial whereby a reasonable jury could have determined the sums awarded by this jury. Indeed, Suzuki does not challenge the valuations of the damage awards for items 1-11, arguing instead that nothing at all is owing.

The judgment as to items 1-4 and 7-11 is affirmed, including damages assessed for these items in the total amount of \$104,000.

## V

### Injunction

The district court, having entered final judgment that the Suzuki Full Floater suspension infringed claim 9 of the '332 patent, denied Richardson's motion for injunction.

[10] Infringement having been established, it is contrary to the laws of property, of which the patent law partakes, to deny the patentee's right to exclude others from use of his property. 35 U.S.C. §261. "[T]he right to exclude recognized in a patent is but the essence of the concept of property". *Connell*, 722 F.2d at 1548, 220 USPQ at 198 (citing *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983)).

It is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 842 F.2d 1275, 1281, 6 USPQ2d 1277, 1283 (Fed. Cir. 1988). Suzuki has presented no such reason. This court stated in *H.H. Robertson Co. v. United Steel Deck, Inc.*, 820 F.2d 384, 390, 2 USPQ2d 1926, 1929-30 (Fed. Cir. 1987), when reviewing an injunction granted *pendente lite*:

In matters involving patent rights, irreparable harm has been presumed when a clear showing has been made of patent validity and infringement. *Smith International*, 718 F.2d at 1581, 219 USPQ at 692. This presumption derives in part from the finite term of the patent grant, for patent expiration is not suspended during litigation, and the passage of time can work irremediable harm.

We observe that the '332 patent will expire in less than four years, that litigation started over eight years ago, and that the district court remarked that further proceedings could consume "several years".

Further, a misappropriator of trade secrets has no authorization of right to contin-

ue to reap the benefits of its wrongful acts. Richardson is entitled to an injunction against Suzuki's continuing use of trade secrets Nos. 5 and 6. *By-Buk Co.*, 163 Cal. App.2d at 167, 329 P.2d at 153, 118 USPQ at 553-54; *Components for Research, Inc.*, 241 Cal.App.2d at 730, 50 Cal.Rptr. at 832.

The denial of Richardson's request for injunction is reversed. On remand the district court shall enter appropriate injunctive relief.

## VI

### Fraud

The jury found by special verdicts that Suzuki fraudulently induced Richardson to reveal his trade secrets by concealing its intention not to exercise its option or take a license, and that Suzuki fraudulently concealed from Richardson the fact that it was developing the Full Floater "with the intention of declining to exercise the option and then nevertheless to utilize the plaintiff's trade secrets in the full floater". The jury also found fraud in that Suzuki filed the Tamaki patent application "in the knowledge that the invention asserted therein (the spring/swing arm connection) was first disclosed to them by Richardson". The jury awarded Richardson \$20,000 in compensatory and \$100,000 in punitive damages.

The district court vacated the judgment and ordered a new trial. Suzuki asserts that the court should have granted Suzuki's motion for judgment n.o.v. instead of ordering a new trial, while Richardson asserts that the court should have upheld the jury verdicts.

The district court certified the question of how to treat its belief that Suzuki did not commit the offenses of fraud and concealment found by the jury, including the question of punitive damages. We first must consider whether a reasonable jury could have reached the verdicts here reached. *Lavender v. Kurn*, 327 U.S. at 653. Apt is the statement of the Ninth Circuit in *Crocker-Citizens Nat'l. Bank v. Control Metals Corp.*, 566 F.2d 631, 635 (9th Cir. 1977): "Courts are not free to reweigh the evidence and set aside the jury verdict merely because the jury could have drawn different inferences or conclusions or because judges feel that other results are more reasonable", quoting *Cockrum v. Whitney*, 479 F.2d 84, 86 (9th Cir. 1973), in turn quoting *Tennant v. Peoria & P. U. Ry. Co.*, 321 U.S. 29, 35 (1944).

[11] The record shows that there was testimony, based on certain of Suzuki's documents, on which a reasonable jury could have

supported these verdicts. There were issues of credibility, and inferences that could reasonably have been drawn in a manner adverse to Suzuki. "The credibility of witnesses and the weight of the evidence are issues for the jury and are generally not subject to appellate review." *Benigni*, 853 F.2d at 1525. While the district court may have believed that Suzuki did not commit fraud, review shows that the requirements for vacating the jury verdicts and relitigating the issue were not met. *Hanson*, 541 F.2d at 1359; *William Inglis*, 668 F.2d at 1027. A fresh trial is not warranted simply because the district court would have reached a different verdict.

A jury assessment of punitive damages is not excluded in circumstances such as those here presented, where the jury expressly found fraud. *Tri-Tron Int'l v. Vello*, 525 F.2d 432, 437, 188 USPQ 177, 181 (9th Cir. 1975) ("where compensatory damages are sought and awarded, the court has power, on a proper record, to award punitive damages"), citing *Clark v. Bunker* 453 F.2d 1006 1012, 172 USPQ 420, 424 (9th Cir. 1972), in turn citing *El Rancho, Inc. v. First Nat'l Bank*, 406 F.2d 1205, 1218 (9th Cir. 1968), cert. denied, 396 U.S. 875 (1969) (jury verdict awarding punitive damages was supported by evidence of malice) and *Davenport v. Mutual Benefit Health & Accident Ass'n*, 325 F.2d 785, 787 (9th Cir. 1963) (remand for trial to allow evidence of fraud to support claim of punitive damages.)

The district court correctly instructed the jury as to the law, stating that "it's only if you find that the defendants' conduct stem from malice, oppression, fraud or bad faith that you can find any punitive damage at all." As stated in *In re Innovative Construction Systems, Inc.*, 793 F.2d 875, 889, 230 USPQ 94, 104 (7th Cir. 1986):

[A] breach of faith underlies every trade secret claim. However, establishing that breach alone is insufficient to warrant an award of punitive damages; one must also demonstrate that the defendant acted wantonly, willfully, or in reckless disregard of the plaintiff's rights. (Citations omitted)

See also *Neal v. Farmers Insurance Exchange*, 21 Cal.3d 910, 928, 582 P.2d 980, 986, 148 Cal.Rptr. 389, 395 (1978) ("In order to justify an award of exemplary damages, the defendant must be guilty of oppression, fraud or malice. (Civ. Code §3294.) He must act with the intent to vex, injure or annoy, or with a conscious disregard of the plaintiff's rights") (quoting *Silberg v. California Life Insurance Co.*, 11 Cal.3d 452, 462, 521 P.2d 1103, 1110, 113 Cal.Rptr.

711, 718 (1974)); *Reynolds Metals Co. v. Lampert*, 316 F.2d 272, 275 (9th Cir. 1963), cert. denied, 376 U.S. 910 (1964) (in jury trial, evidence to justify punitive damages must show injury was done maliciously or willfully and wantonly or committed with bad motive or recklessly); *Transgo, Inc.*, 768 F.2d at 1024 [227 USPQ at 610] (The determination to award punitive damages was "within the exclusive province of the jury") (quoting *Runge v. Lee*, 441 F.2d 579, 584, 169 USPQ 388, 392 (9th Cir.), cert. denied, 404 U.S. 887 [171 USPQ 322] (1971)).

The jury having found by special verdicts that Suzuki acted fraudulently, the requisite intent was established. "We give the trial judge and jury wide discretion in assessing punitive damages." *Hatrock v. Edward D. Jones & Co.*, 750 F.2d 767, 772 (9th Cir. 1984). The jury's award was not "so disproportionate to the damages sustained as to be the result of passion or prejudice". *Id.* (citing *Neal*, 21 Cal. 3d at 928, 582 P.2d at 990, 148 Cal. Rptr. at 399). *Transgo, Inc.*, 768 F.2d at 1024 [227 USPQ at 610] ("We will not overturn such an award unless it appears that the jury was influenced by passion or prejudice.") (citing *Harmen v. Smith*, 693 F.2d 932, 947 (9th Cir. 1982), cert. denied, 464 U.S. 822 (1983)).

We answer the certified question that, in this case, neither a new trial nor judgment n.o.v. was warranted. The order of a new trial on this issue is vacated. The judgment on the jury verdicts of fraud and the award of compensatory and punitive damages is reinstated.

## VII

### The Tamaki Patent

Richardson states that Suzuki fraudulently patented the Alternate Shock Mount that had been disclosed to Suzuki by Richardson and Cazort in a patent that also described the "criss-cross" modification developed at Suzuki. There was evidence and argument on the factual premises, including the absence of supporting documentation on the part of the named inventors Hirohide Tamaki and Manabu Suzuki, the earliest record on their behalf being dated October 1979. The corresponding Japanese patent application was filed on October 16, 1979.

The jury rendered the following special verdicts:

C-3. Did Suzuki and/or Mr. Tamaki file the Tamaki patent application in the knowledge that the invention asserted therein (the spring/swing arm connection) was first disclosed to them by Richardson:

Answer: YES

H-1. Do you find that the Plaintiff, Richardson, is the real inventor of the Shock Mount shown in the Tamaki patents applications?

Answer: NO

It was not significantly disputed that claims 1 through 8 of the Tamaki patent, corresponding United States Patent 4,457,393 cover the Alternate Shock Mount of Richardson and Cazort, and that the patent includes the criss-cross embodiment made by Tamaki and Suzuki. (The scope of the patent was raised, but is not material to our decision.)

The district court denied Richardson's post-trial motion that the Tamaki patent be assigned to Richardson. In colloquy with counsel the court explained that it did so because "the jury said Plaintiff wasn't the inventor". Indeed it was so, and discussed at trial, that Plaintiff and Cazort, not Richardson alone, invented the Alternate Shock Mount. Cazort, as Richardson, testified at length about the structure. Special verdict H-1 that Plaintiff is not "the real inventor" is inconsistent with the co-inventor status of Cazort, also with the Japanese contribution to the criss-cross embodiment.

[12] The force of special verdict H-1 is diminished. This verdict was not controlling on appeal. "It was further the duty of the court to direct the appropriate judgment to be entered upon the special verdicts." *Wentworth & General Insurance Co. v. Wentworth*, 315 F.2d 171, 175 (5th Cir. 1963). The district court having failed to implement the verdict, Richardson's motion for a new trial and for assignment of the Tamaki patent was not out of order.

The remedy of assignment of the Tamaki patent is a different question from Richardson's claim of ownership. The correction of inventorship is an affirmative step, and is not before the court. The presence of a further modification of one or two claims of the patent does not alter the fact that the Alternate Shock Mount does not exist without the imposition of an equitable remedy which would otherwise hold otherwise would ratify and inure to the benefit of the wrongdoing.

Based on the jury verdict, Richardson is entitled to ownership of the Tamaki patent against Suzuki. Such remedy is appropriate under the circumstances; see, e.g., *Palmolive Co. v. Carter Products, Inc.*, 352 F.2d 855, 865, 108 USPQ 383, 387 (9th Cir.), cert. denied, 352 U.S. 843 [111 USPQ 467] (1956) (corporate assignee of the patent application ordered to assign to the holder of trade secrets all rights to the patent applications based thereon); *De Lot*

Answer: YES

H-1. Do you find that the Plaintiff, Richardson, is the real inventor of the invention shown in the Tamaki patents and patent applications?

Answer: NO

It was not significantly disputed at trial that claims 1 through 8 of the Tamaki corresponding United States Patent No. 4,457,393 cover the Alternate Shock Mount of Richardson and Cazort, and that claim 9 includes the criss-cross embodiment of Tamaki and Suzuki. (The scope of claim 5 is raised, but is not material to our conclusion.)

The district court denied Richardson's post-trial motion that the Tamaki patent be assigned to Richardson. In colloquy with counsel the court explained that it could not do so because "the jury said Richardson wasn't the inventor". Indeed it was conceded, and discussed at trial, that Richardson and Cazort, not Richardson alone, invented the Alternate Shock Mount. Cazort, as well as Richardson, testified at length on this structure. Special verdict H-1 that Richardson is not "the real inventor" is in accord with the co-inventor status of Cazort, and also with the Japanese contribution of the criss-cross embodiment.

[12] The force of special verdict C-3 is not diminished. This verdict was not challenged on appeal. "It was further the duty of the court to direct the appropriate judgment to be entered upon the special verdict." *Traders and General Insurance Co. v. Mallitz*, 315 F.2d 171, 175 (5th Cir. 1963). The district court having failed to implement this verdict, Richardson's motion for judgment and for assignment of the Tamaki patents was not out of order.

The remedy of assignment of the Tamaki patents is a different question from whether Richardson is a sole or joint inventor. The correction of inventorship is an administrative step, and is not before the court. Similarly, the presence of a further modification in one or two claims of the patent directed to the Alternate Shock Mount does not negate the imposition of an equitable remedy. To hold otherwise would ratify and indeed reward the wrongdoing.

Based on the jury verdict, Richardson is entitled to ownership of the patents as against Suzuki. Such remedy is appropriate under the circumstances; see, e.g., *Colgate-Palmolive Co. v. Carter Products, Inc.*, 230 F.2d 855, 865, 108 USPQ 383, 391 (4th Cir.), cert. denied, 352 U.S. 843 [111 USPQ 467] (1956) (corporate assignee of patent application ordered to assign to original holder of trade secrets all rights to patent applications based thereon); *De Long Corp.*

*v. Lucas*, 176 F.Supp. 104, 134 [122 USPQ 471, 493] (S.D.N.Y. 1959), aff'd, 278 F.2d 804 [125 USPQ 370] (2nd Cir.), cert. denied, 364 U.S. 833 [127 USPQ 555] (1960) (when an employee has acquired patents on inventions developed by his former employer, "the courts will hold the wrongdoer to be a constructive trustee of the property misappropriated and will order a conveyance by the wrongdoer to the former employer"); *Becher v. Contoure Laboratories, Inc.*, 279 U.S. 388 (1929) (same); *Saco-Lowell Shops v. Reynolds*, 141 F.2d 587, 598, 61 USPQ 3, 13 (4th Cir. 1944) (requiring assignment of patent based on ideas received by licensee from licensor in confidence during development of invention for market).

Suzuki argues that Richardson has no remedy other than by seeking an interference in the United States Patent and Trademark Office with his own invention, and presumably by taking similar actions, if such are available, in other countries. We do not agree. The courts are not powerless to redress wrongful appropriation of intellectual property by those subject to the courts' jurisdiction.

The denial of Richardson's motion for judgment is reversed. Suzuki shall assign to Richardson the patents filed by Suzuki that include the Richardson/Cazort invention of the Alternate Shock Mount, in all countries. We remand to the district court for the purpose of implementing compliance.

### VIII

#### Prejudgment Interest

[13] The district court denied Richardson's request for prejudgment interest on both the patent infringement and the trade secret damage awards. Prejudgment interest is the rule governing this class of award. *General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 655, 217 USPQ 1185, 1188 (1983); *Lummus Industries, Inc. v. D.M. & E. Corp.*, 862 F.2d 267, 274, 8 USPQ2d 1983, 1988 (Fed. Cir. 1988); *Fromson*, 853 F.2d at 1573-74, 7 USPQ2d at 1611; *Bio-Rad Laboratories, Inc. v. Nicolet Instrument Corp.*, 807 F.2d 964, 967, 1 USPQ2d 1191, 1193 (Fed. Cir. 1986), cert. denied, 107 S.Ct. 3187 (1987).

No exceptional circumstances having been shown, and no reason why damages for misappropriated trade secrets should be treated differently from damages for patent infringement, the denial of prejudgment interest is reversed.

IX  
*Willful Infringement  
and Exceptional Case*

The district court refused to submit the question of willful infringement to the jury, stating that Richardson had not provided sufficient evidence to go to the jury.

To refuse to give an issue to the jury is to direct a verdict in favor of the opposing party. Thus we review the district court's ruling on the standard of "whether the evidence permits only one reasonable conclusion after viewing the evidence in the light most favorable to the non-moving party and drawing all inferences in favor of that party." *Bulgo v. Munoz*, 853 F.2d 710, 714 (9th Cir. 1988) (citing *Peterson v. Kennedy*, 771 F.2d 1244, 1256 (9th Cir. 1985), cert. denied, 475 U.S. 1122 (1986)). See also *Connell*, 722 F.2d at 1546, 220 USPQ at 197.

[14] Richardson refers to the evidence adduced in connection with the jury verdicts of fraud, to the verdicts of misappropriation of trade secrets 5 and 6, to the absence of any opinion of United States counsel concerning validity of the '332 patent when Suzuki started its infringing activity, and to evidence from Suzuki's records tending to show bad faith. Viewing this evidence in the light most favorable to Richardson, and drawing all reasonable inferences in his favor, there was sufficient evidence to take to the jury, for the evidence does not require a verdict in favor of Suzuki. Absent sufficient basis for directing the verdict, Richardson has the right of jury determination of this factual question. Willfulness of behavior is a classical jury question of intent. *Shiley*, 794 F.2d at 1568, 230 USPQ at 115; *Hammerquist v. Clarke's Sheet Metal, Inc.*, 658 F.2d 1319, 1325-26, 212 USPQ 481, 486 (9th Cir. 1981), cert. denied, 460 U.S. 1052 (1983). When trial is had to a jury, the issue should be decided by the jury.

We remand for this purpose. The jury's findings on the issue of willfulness will be pertinent not only to the question of multiplication of damages under 35 U.S.C. §284, but also to determination of whether this is an exceptional case in terms of 35 U.S.C. §285. Entitlement under California Civil Code §3426 may also be considered.

X  
*Other Arguments*

Both sides have raised many points in their briefs, disputing most aspects of the proceedings. We have considered all arguments in reaching our conclusions.

*Costs*

[15] The award by the trial court of only one third costs to Richardson, in view of the judgments in his favor on the major substantive issues, exceeded the trial court's discretionary authority. Richardson is entitled to his statutory costs incurred before the district court. The reduction thereof is reversed.

Costs on this appeal are taxed in favor of Richardson.

**AFFIRMED IN PART, REVERSED IN PART, VACATED IN PART, AND REMANDED.**

Pennsylvania Superior Court

Den-Tal-Ez Inc. v. Siemens Capital Corp.

No. 02312 Philadelphia 1987

Decided October 21, 1988

**TRADEMARKS AND UNFAIR TRADE PRACTICES**

**1. Trade secrets — In general (§400.01)**

Mutual non-disclosure agreement, executed between plaintiff dental handpiece company and defendant that was negotiating to acquire plaintiff, which requires confidential information to be so marked but which does not define "confidential" information as limited only to information that is marked does not therefore limit its protections only to information marked "confidential."

**2. Unfair competition — In general (§395.01)**

**Trade secrets — In general (§400.01)**

Execution of confidentiality agreement does not thereby constitute implied waiver of common law protections against misappropriation of trade secrets.

**3. Trade secrets — In general (§400.01)**

Starting point under Pennsylvania law for determining whether alleged misappropriation of trade secret occurred is not whether confidential relationship existed but whether, in fact, trade secret existed which could be misappropriated, since Pennsylvania follows "property" view of trade secrets which shifts emphasis from whether defendant's conduct conformed to its confidential relationship with plaintiff to close analysis of whether information was trade secret.

**4. Trade secrets — Elements (§400.03)**

Concept of trade secret, although crucial to substantial secrecy and ownership, and under Pennsylvania character of information protected is not relevant.

**5. Trade secrets — Elements (§400.03)**

Information regarding suppliers is not trade secret, although readily be learned, but inventory data and unit costs, and product margin data is protectible.

**6. Unfair competition — common law (§395.01)**

Defendant's failure, without purchase plaintiff confidential business information from plaintiff, to disclose continued interest in acquiring competitor is actionable under even if such information of trade secret.

**7. Trade secrets — In general**

**Unfair competition — In general**

**REMEDIES**

**Non-monetary and injunctive relief — Permanent (§505.0709)**

Injunction barring defendant from obtaining confidential information from plaintiff during negotiations to purchase plaintiff's information to disclose to plaintiff its purchasing plaintiff's information in acquiring competitor for trade secret, in view of evidence of substantial threat that defendant's disclosure of plaintiff's information acquisition were consummated, resulting injury to plaintiff should be adequately remedied by damages, and demonstration of information can reasonably be expected to dissipate after three years.

Appeal from Pennsylvania Superior Court, Philadelphia County, Den-Tal-Ez Inc. and its Dental Manufacturing Co. v. Siemens Capital Corp., unfair competition and misappropriation of business information action.

1999),<sup>16</sup> see also *City of Pittsburgh v. West Penn Power Co.*, 147 F.3d 256, 268 (3d Cir. 1998) (holding that antitrust injury could not arise from actions in a regulated industry because the market was non-competitive), *Schuylkill Energy*, 113 F.3d at 418 (holding that because law and contract made a market non-competitive, no antitrust injury could result from actions in the market because such actions could not be said to harm competition).<sup>17</sup> As we have discussed above, because SpiroSafe is a patented product, the market for it is subject to the statutory monopoly decreed by the patent laws, and is thus by definition non-competitive. In turn, Lindab and Midstates's actions within this non-competitive market cannot have an anti-competitive effect, since the grant of the patent ruled out competition in SpiroSafe for the duration of the patent. Sheet Metal's injuries, such as they may be, are not antitrust injuries and Sheet Metal therefore has no standing to bring this private action under the Clayton Act.

### III. Conclusion

As none of the claims regarding this patented product is viable under the antitrust laws, we will grant defendants' motions.

### ORDER

AND NOW, this 18th day of July, 2000, upon consideration of the motions to dismiss the Amended Complaint pursuant to Fed. R. Civ. P. 12(b)(6) of defendant Lindab, Inc. (docket number 15) and of defendant Midstates Spiral (docket number 16), and plaintiff's responses thereto, and Lindab's reply thereto, and for the reasons stated in the accompanying Memorandum, it is hereby ORDERED that:

<sup>16</sup> In stating the quoted passage, the *Bar Technologies* court was outlining the defendant's position, but the court went on to conclude that it "agree[d] with [this] reasoning," *Bar Techs.*, 73 F.Supp.2d at 520.

<sup>17</sup> *West Penn Power* and *Schuylkill Energy* concerned the electrical power industry and *Bar Technologies* the railroad industry. We recognize that these markets are both larger than the single-product "market" at issue here and are also subject to an involved regulatory scheme, which the "market" for SpiroSafe is not. Nonetheless, patent laws grant to the patentee a clear monopoly in the patented product, and, as we have noted several times above, Sheet Metal only alleges wrongdoing in this very limited market. We thus find that these cases are apposite to the situation presented by the Amended Complaint.

1. Defendant Lindab, Inc.'s motion is GRANTED;
2. Defendant Midstates Spiral's motion is GRANTED;
3. The Amended Complaint is DISMISSED; and
4. The Clerk shall CLOSE this case statistically.

### U.S. Court of Appeals Federal Circuit

Hockerson-Halberstadt Inc. v. Avia Group International Inc.

No. 99-1505

Decided July 27, 2000

### PATENTS

1. Patent construction — Claims — Broad or narrow (§125.1303)

#### Patent construction — Claims — Defining terms (§125.1305)

Claim for footwear reciting "central longitudinal groove" which divides underside of heel part into pair of longitudinal fins is properly construed to require that width of groove must be less than combined width of fins, since ordinary and accustomed meaning of "groove" is "relatively long and narrow structure," since written description shows that width of fins is inversely proportional to width of groove, and that narrow groove complemented by wide fins is consonant with shock absorption purpose of invention, and since inventor, in overcoming prior art rejection during prosecution, necessarily defined groove as requiring width that must be less than combined width of fins.

2. Patent construction — Specification and drawings — In general (§125.1101)

Patent drawings do not define precise proportions of elements of invention, and may not be relied on to show particular sizes if specification is completely silent on that issue.

3. Patent construction — Prosecution history estoppel (§125.09)

#### Patent construction — Claims — Defining terms (§125.1305)

Proposition that erroneous statements made during prosecution do not affect claim construction analysis does not apply if there



<sup>2</sup> During the proceedings, Avia's attorney admitted a history of allegedly infringing trademarks in Sporting Goods Company's line of clothing. Following the conclusion of the proceedings, HHI filed a lawsuit for infringement. In 1998, HHI also filed a lawsuit against ("Reebok"), which was also filed against Avia at the time the lawsuit against HHI was filed. The suits were subsequently dismissed on grounds of discovery. HHI filed a motion for summary judgment through stipulation.



[8] said ridge also being attached on its inner surface to the footwear upper; and a central longitudinal groove in the underside of the heel part extending forwardly through the heel part into the underside of the sole part to divide the lower surface of the heel part into a pair of fins which are capable of bending outwardly and upwardly when the underside of the heel part strikes the ground. [numbering added]

During prosecution of the '792 patent application, the Patent and Trademark Office ("PTO") examiner rejected all the original claims under 35 U.S.C. § 103 as obvious in light of U.S. Patent No. 3,100,354 ("the Lombard patent") and U.S. Patent No. 4,128,950 ("the Bowerman patent"). In par-

ticular, the Lombard patent taught a shoe in which the "bottom width of the channel is greater than the combined width of the rims."<sup>1</sup> In response to the rejection, the inventor canceled the original claims and replaced them with three new independent claims, all of which contained the term "central longitudinal groove." The inventor also made various arguments to distinguish the new claims from the prior art. In one of his arguments, the inventor submitted drawings comparing the claimed invention with a hypothetical combination of the Lombard and Bowerman patents. The drawings, with the claimed invention on the right (figures 12B and 16B) and the hypothetical combination on the left (figures 12A and 16A), depicted the following:



FIG. 12A

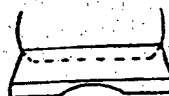


FIG. 12B

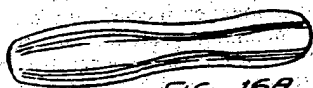


FIG. 16A



FIG. 16B

Pursuant to these drawings, the inventor argued that "[a]pplicant is providing a much narrower groove for a totally different purpose, namely to provide fins which can be compressed outwardly and upwardly. Such fins are not provided on the shoe of the prior art." Following these arguments, the examiner allowed the new claims, which issued as independent claims 1, 2, and 3 of the '792 patent. The inventor then assigned the '792 patent to HHI.

In 1995, HHI sued Avia for infringement of the '792 patent. Later that year, Avia sought a reexamination of the patent before the PTO, and the district court stayed the suit pending the outcome of the reexamination proceedings.<sup>2</sup> The litigation resumed

after the patent emerged from the reexamination proceedings with only a slight change to claims 1 and 3.<sup>3</sup> On January 8, 1999, the district court conducted a claim construction hearing and issued a written order two months later.

In its order, the district court analyzed the '792 patent and its prosecution history, and construed the term "central longitudinal groove"—the only term at issue on appeal—as being "a relatively long and narrow structure that extends longitudinally or lengthwise completely through the center so as to divide the heel part into a pair of 'fins.' The width of the central longitudinal groove must be less than the combined width of the two fins." Based on this claim construction, HHI and Avia agreed to a "Stipulation and Order of Dismissal" in which HHI stipulated to non-infringement under the district court's claim construction and agreed to dismiss its remaining claims with prejudice, and Avia agreed to dismiss its counterclaims without prejudice. Pursuant to that agreement, the district court entered a final order of non-infringement and dismissed all the remaining

<sup>1</sup> Both parties agree that the terms "channel" and "rims" in the Lombard patent are the same as the terms "groove" and "fins" in the '792 patent.

<sup>2</sup> During the pendency of the reexamination proceedings, Avia sold assets, including its inventory of allegedly infringing shoes, to American Sporting Goods Corporation ("ASG"). In 1997, following the conclusion of the reexamination proceedings, HHI filed a complaint against ASG for infringement of the '792 patent. Then, in 1998, HHI also sued Reebok International Ltd. ("Reebok"), which was the sole shareholder of Avia at the time the suit was pending. All three suits were subsequently consolidated for purposes of discovery. HHI resolved its claim against ASG through stipulated dismissal, and the district

court dismissed HHI's claim against Reebok on summary judgment, which is not on appeal.

<sup>3</sup> During the reexamination proceeding, claims 1 and 3 of the '792 application were amended by replacing the word "forwardly" with "completely."

claims and counterclaims. This appeal followed.

### DISCUSSION

The only issue on appeal is whether the district court correctly construed the term "central longitudinal groove" to require that the width of the groove must be less than the combined width of the fins. Claim construction is a question of law, see *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979, 34 USPQ2d 1321, 1329 (Fed. Cir. 1995) (en banc); *aff'd*, 517 U.S. 370 [38 USPQ2d 1461] (1996), that we review *de novo* on appeal, see *Cybor Corp. v. FAS Techs., Inc.*, 128 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed. Cir. 1998) (en banc). Proper claim construction entails an analysis of a patent record's intrinsic evidence—the claim language, the written description, and the prosecution history. See *Vitronics Corp. v. Conception, Inc.*, 90 F.3d 1576, 1582-83, 39 USPQ2d 1573, 1576-77 (Fed. Cir. 1996). If the meaning of a claim is unambiguous from the intrinsic evidence, then a court may not rely on extrinsic evidence for purposes of claim construction. See *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 716, 48 USPQ2d 1911, 1917 (Fed. Cir. 1998) (explaining that a court may receive extrinsic evidence to educate itself about the underlying technology, but it cannot use extrinsic evidence "to arrive at a claim construction that is clearly at odds with the claim construction mandated by the [intrinsic evidence]").

[1] Claim construction analysis begins with the claim language itself. See *Karlin Tech. Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971, 50 USPQ2d 1465, 1467 (Fed. Cir. 1999); *Reinshaw PLC v. Marposs Società per Azioni*, 158 F.3d 1243, 1248, 48 USPQ2d 1117, 1120 (Fed. Cir. 1998). As a starting point, the court gives claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art. See *Hoechst Celanese Corp. v. BP Chem. Ltd.*, 78 F.3d 1575, 1578, 38 USPQ2d 1126, 1129 (Fed. Cir. 1996) (stating that the court assigns a claim term the meaning "that it would be given by persons experienced in the field of invention"); *Markman*, 52 F.3d at 980, 34 USPQ2d at 1330. Here, the relevant claim language recites a "central longitudinal groove in the underside of the heel part extending forwardly through the heel part into the underside of the sole part to divide the lower surface of the heel part into a pair of fins." Col. 5, ll. 45-58. Thus, our analysis focuses on the word "groove" in the term "central longitudinal groove." The ordinary

and accustomed meaning of "groove," as the district court correctly found, is a "relatively long and narrow structure."

The claim term's ordinary and accustomed meaning initially serves as a default meaning because the patentee may act as a lexicographer and ascribe a different, or modified, meaning to the term. See *Multi-form Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477, 45 USPQ2d 1429, 1432 (Fed. Cir. 1998) (observing that an inventor, acting as a lexicographer, may bestow "a special meaning to a term in order to convey a character or property or nuance relevant to the particular invention"); *Intellicell, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388, 21 USPQ2d 1671, 1674 (Fed. Cir. 1994). The court, therefore, must examine a patent's specification and prosecution history to determine whether the patentee has given the term an unconventional meaning. See *Vitronics*, 90 F.3d at 1582, 39 USPQ2d at 1577 (holding that "it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning [because the specification] acts as a dictionary when it expressly defines terms . . . or when it defines terms by implication" (emphasis added)); *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995) (determining that "[a]rguments and amendments made during the prosecution of a patent application . . . as well as the specification and other claims must be examined to determine the meaning of terms in a claim" (emphasis added)). If the patentee has not done so, the term's ordinary and accustomed meaning controls. See *York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572, 40 USPQ2d 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.").

The written description of the '792 patent supports the district court's initial interpretation of groove as a long and narrow structure. The written description teaches an inverted groove that divides a heel lengthwise and forms fins on each side. It thus follows that the width of the fins is inversely proportional to the width of the groove. The written description also explains that the claimed invention improves shock absorption stability because "a large part of the total heel area is deployed in shock absorption, [resulting] in a very good cushioning effect." Col. 4, ll. 36-38. Thus, a narrow groove complemented by a wide pair of fins is consonant with the

purpose of the invention, F.3d at 1250, 48 USPQ2d at 1146, 1158 (holding that a claim with the purpose of being correct).

Review of the prosecution history, however, reveals that the particular interpretation of the term "central longitudinal groove" modifying the term "CVI/Beta Ventu" F.3d 1146, 1158 (Fed. Cir. 1997) made during prosecution prior to a particular claim interpretation that is binding on the district court. *Techs.*, 54 F.3d at 1146, 1158 ("The prosecution history of a claim interpretation of claim interpretation of prosecution."). In the '792 patent, the inventor, by comparing the invention to a hypothetical prior art device, argued that the invention was different from the prior art by arguing that the invention "provides a much more efficient wear as possible" (emphasis added). The inventor's claim language, having a groove disclosed in the prior art, in turn, teaches a width greater than the two fins. The inventor held that the invention's central longitudinal width that must be less than the width of the two fins.

On appeal, the HHI court incorrectly interpreted the history. HHI's competitor would argue that the inventor's "much narrower" groove was an erroneous statement of a pair of fins because the state of the art drawings and the specification of a groove that

[2] HHI's argument that the '792 patent is deceptively drawn to scale. HHI's inference about the proportions of the respective widths of the fins and the groove. Under our precedent, the precise

purpose of the invention. *Cf. Reinshaw*, 158 F.3d at 1250, 48 USPQ2d at 1122 (reasoning that a claim interpretation that aligns with the purpose of the invention is likely to be correct).

Review of the prosecution history, however, reveals that the inventor disclaimed a particular interpretation of groove, thereby modifying the term's ordinary meaning. *See CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1158, 42 USPQ2d 1577, 1585 (Fed. Cir. 1997) (observing that statements made during prosecution commit the inventor to a particular meaning of a claim term that is binding during litigation); *Southwall Techs.*, 54 F.3d at 1576, 34 USPQ2d at 1676 ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."). During prosecution of the '792 patent, the inventor submitted drawings comparing the features of the claimed invention to a hypothetical combination of the prior art Lombard and Bowerman patents. The inventor then distinguished the prior art by arguing that the claimed invention "provid[es] a much narrower groove for a totally different purpose, namely . . . to involve as much of the underneath surface of the footwear as possible in a cushioning and supporting function." Flowing from this statement is the inventor's clear disavowal of footwear having a groove width greater than that disclosed in the prior art. The Lombard patent, in turn, teaches a shoe with a groove width greater than the combined width of the two fins. Thus, the district court correctly held that the inventor necessarily defined the central longitudinal groove as requiring a width that must be less than the combined width of the two fins.

On appeal, HHI asserts that the district court incorrectly analyzed the prosecution history. HHI contends that a reasonable competitor would understand that the inventor's "much narrower groove" statement was an erroneous statement rather than a disavowal of a particular width relationship because the statement was made in reference to drawings submitted during prosecution, and the specification contains figures depicting a groove that is wider than the fins.

[2] HHI's argument is unavailing. The '792 patent is devoid of any indication that the proportions of the groove and fins are drawn to scale. HHI's argument thus hinges on an inference drawn from certain figures about the quantitative relationship between the respective widths of the groove and fins. Under our precedent, however, it is well established that patent drawings do not define the precise proportions of the elements

and may not be relied on to show particular sizes if the specification is completely silent on the issue. *See In re Wright*, 569 F.2d 1124, 1127, 193 USPQ 332, 335 (CCPA 1977) ("Absent any written description in the specification of quantitative values, arguments based on measurement of a drawing are of little value."); *In re Olson*, 212 F.2d 590, 592, 101 USPQ 401, 402 (CCPA 1954); *cf. Manual of Patent Examining Procedure* § 2125 (1998). Thus, in the present case, a reasonable competitor, being aware that figures in a patent are not drawn to scale unless otherwise indicated, would understand the arguments in the prosecution history as clearly disclaiming a groove having a width greater than the combined width of the fins.

HHI's argument therefore reduces to a request for a mulligan that would erase from the prosecution history the inventor's disavowal of a particular aspect of a claim term's meaning. Such an argument is inimical to the public notice function provided by the prosecution history. The prosecution history constitutes a public record of the patentee's representations concerning the scope and meaning of the claims, and competitors are entitled to rely on those representations when ascertaining the degree of lawful conduct, such as designing around the claimed invention. *See Vitronics*, 90 F.3d at 1583, 39 USPQ2d at 1577; *Lemelson v. General Mills, Inc.*, 968 F.2d 1202, 1208, 23 USPQ2d 1284, 1289 (Fed. Cir. 1992). In the present case, the inventor's statements about groove width are part of the prosecution history and form the totality of the public record upon which competitors rely. *See Elkay Mfg. Co. v. Ebcro Mfg. Co.*, 192 F.3d 973, 979, 52 USPQ2d 1109, 1113 (Fed. Cir. 1999) (stating that the totality of the prosecution history must be considered and reasoning that it is "irrelevant whether [the inventor] relinquished [a] potential claim construction in an amendment to the claim or in an argument to overcome or distinguish a reference"). Were we to accept HHI's position, we would undercut the public's reliance on a statement that was in the public record and upon which reasonable competitors formed their business strategies.

HHI further cites *Intervet Am. v. Kee-Vet Labs, Inc.*, 887 F.2d 1050, 12 USPQ2d 1474 (Fed. Cir. 1989), for the proposition that erroneous statements made during prosecution do not affect claim construction analysis. *Intervet* is inapposite to this case and does not support HHI's cause. In *Intervet*, the patentee, responding to an office action, amended three claims to include the term "single administration." *Id.* at 1053-54, 12

USPQ2d at 1476-77. Then, in the remarks accompanying the amendment, the patentee made an unqualified statement that the "claims are restricted to a single vaccination." See *id.* at 1054, 12 USPQ2d at 1477. On appeal, the issue was whether claims without the term "single administration" nonetheless included that limitation because of the patentee's remarks. See *id.* This court held that the remarks were clearly erroneous and did not apply to all the claims, but were limited to only those claims that included the term "single administration." See *id.* Thus, although not invoking the exact terminology, we implicitly reasoned that a reasonable competitor would perceive the remarks as erroneous and understand them as applying only to the amended claims. The court also concluded that, to the extent the examiner may have relied on those remarks in allowing all the claims to issue, such confusion was likely cured by subsequent communications between the examiner and the patentee. See *id.*

[3] The present circumstances are distinct from *Intervet*. Here, unlike *Intervet*, no conspicuous error exists. The term "central longitudinal groove" is present in all three claims of the '792 patent. Thus the inventor's statements and submitted drawings concerning groove width apply with uniform force to all the claims. See *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1348, 47 USPQ2d 1418, 1427 (Fed. Cir. 1998) ("Absent qualifying language in the remarks, arguments made to obtain the allowance of one claim are relevant to interpreting other claims in the same patent.") Accordingly, a reasonable competitor reading the '792 patent's prosecution history would have no reason to believe that a mistake was made or that the inventor meant anything other than what he said. Also, unlike *Intervet*, the '792 patent issued immediately after the inventor's arguments regarding the prior art; consequently, the examiner continued to understand that the groove in the '792 patent was narrower than the one in the Lombard patent.

### CONCLUSION

Because we hold that during the prosecution of the '792 patent, the inventor disclaimed a groove width greater than the combined width of the fins, we affirm the district court's claim construction.

### AFFIRMED.

### COSTS

Each party shall bear its own costs.

### U.S. Court of Appeals Federal Circuit

International Nutrition Co. v. Horphag Research Ltd.

No. 99-1385

Decided July 27, 2000

### TRADEMARKS AND UNFAIR TRADE PRACTICES

1. Acquisition, assignment, and maintenance of marks — Assignment, licenses, and franchises (§305.06)

Practice and procedure in Patent and Trademark Office — Interpartes proceedings — Opposition and cancellation — In general (§325.0305.01)

### JUDICIAL PRACTICE AND PROCEDURE

Procedure — Prior adjudication — Res judicata; collateral estoppel (§410.1503)

Transfer of rights in French registration for "Pycnogenols" mark did not place transferee in privity with transferor for purposes of holding that res judicata bars transferee's petition to cancel U.S. registration for "Pycnogenol," since transferor's opposition proceeding, which purportedly gave rise to res judicata, was not based on French registration, and is not subject of instant cancellation proceeding brought by transferee, and since cancellation proceeding therefore does not derive from or involve adjudication of transferee's rights in French trademark for "Pycnogenols."

### TRADEMARKS AND UNFAIR TRADE PRACTICES

2. Acquisition, assignment, and maintenance of marks — Assignment, licenses, and franchises (§305.06)

Practice and procedure in Patent and Trademark Office — Interpartes proceedings — Opposition and cancellation — In general (§325.0305.01)

### JUDICIAL PRACTICE AND PROCEDURE

Procedure — Prior adjudication — Res judicata; collateral estoppel (§410.1503)  
Trademark Trial and Appeal Board's finding that cancellation petitioner claims

rights in same chain of title, opposition proceeding holding that compatibility with opposition is therefore it is unclear whether petitioner obtained "mark at issue" from one of its co-sponsors, and board's transfer of right during opposition proceeding judgment can be so party with no mark at issue, a case therefore relation without opposition ever had or to those of co

Appeal from Patent and Trademark Office, Trademark Trial and Appeal Board.

International Nutrition Co. appeals from Patent and Trademark Office's decision to cancel trademark for "Pycnogenols" owned by Horphag Research Ltd. From dismissal of appeal, ground of res judicata. Vacated and remanded.

Norman H. Zink, for appellant.  
Cooper & Dunham, for appellee.

Marvin S. Gittler, for appellant.  
Cobrin & Gittler, for appellee.

Before Lourie, Chief Judge, and  
Circuit Judges.

Bryson, J.

International Nutrition Co. appeals from the Patent and Trademark Office's decision to cancel trademark for "Pycnogenols" owned by Horphag Research Ltd. Trial and Appeal Board's decision to cancel trademark based on res judicata. We conclude that res judicata bars cancellation proceeding. Petition for rehearing denied. Order and rehearing proceedings.

This case arises from a dispute between International Nutrition Co. and Horphag Research Ltd. over the trademark "Pycnogenols." The United States Patent and Trademark Office (USPTO) cancelled the trademark, and the Trademark Trial and Appeal Board (TTAB) affirmed the USPTO's decision. The Federal Circuit vacated the TTAB's decision and remanded the case for further proceedings.

Geigy Chemical Corp. v. Atlas Chemical Industries, Inc., 58 CCPA 972, 458 F.2d 1005, 1008, 169 USPQ 39, 40-41 (1971).

### Court of Customs and Patent Appeals

In re MRAZ

No. 8642

Decided Mar. 9, 1972

### PATENTS

#### 1. Board of Appeals — Jurisdiction (§19.35)

##### Court of Customs and Patent Appeals — Jurisdiction (§ 28.25)

Neither Board nor court has jurisdiction over propriety of examiner's determination withdrawing claims from further consideration as drawn to nonelected species.

#### 2. Drawings — In general (§34.1)

##### Patentability — Anticipation — Drawings (§51.207)

Although patent drawings are not working drawings, this does not mean that things clearly shown in drawings of reference patent are to be disregarded in determining patentability of claims.

#### 3. Claims — Broad or narrow — In general (§20.201)

Claims are unpatentable when they are so broad as to read on obvious subject matter even though they likewise read on nonobvious subject matter.

##### Particular patents—De-Burring

Mraz, Edge De-Burring Roll, claims 1 to 4, 7, and 8 of application refused.

Appeal from Board of Appeals of the Patent Office.

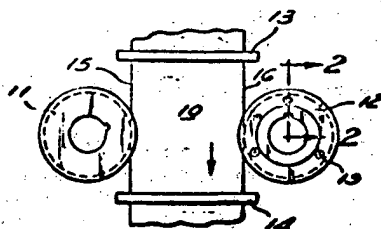


Fig. 1

Application for patent of Steve J. Mraz, Serial No. 458,289, filed May 24, 1965; Patent Office Group 320. From decision rejecting claims 1 to 4, 7, and 8, applicant appeals. Affirmed.

ALBERT L. ELY, JR., and ELY, GOLTRICK & FLYNN, both of Cleveland, Ohio, for appellant.

S. WM. COCHRAN (JOHN W. DEWHIRST of counsel) for Commissioner of Patents.

Before RICH, ALMOND, BALDWIN, and LANE, Associate Judges, and ROSENSTEIN, Judge, United States Customs Court, sitting by designation.

RICH, Judge.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1-4, 7, and 8<sup>1</sup> in appellant's application serial No. 458,289, filed May 24, 1965, for "Edge De-Burring Roll." We affirm.

#### Subject Matter Claimed

Appellant claims apparatus for removing edge burrs from thin metal strips. Such burrs may be formed at the longitudinal edges of strips as a result of slitting or shearing operations used in forming the strips from wider sheet stock. These burrs are asserted to unfit the thin strips for many uses (e.g., for use as the magnetic cores of motors, transformers, and the like), and appellant's specification states that

For sheet metal less than substantially 0.030 inch thick, \*\*\* de-burring has been done by time-consuming and expensive hand operation since there was no entirely satisfactory equipment for this purpose.

Appellant's solution to the above problem may be understood from his figures 1 and 2:

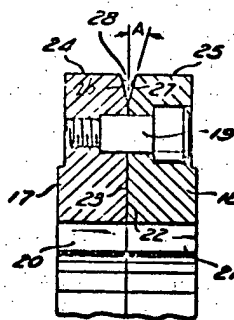


Fig. 2

[1] Appellant's brief states that his appeal is from a decision affirming the rejection "of all of

In Fig. 1, 10 is the metal strip, 13 and 14 are power-driven feed rolls, and 11 and 12 are opposed de-burring rolls. Fig. 2 is a fragmentary vertical cross-section taken along the line 2-2 in Fig. 1. From it one may see that the edge rolls are fabricated from two parts and that the peripheral groove in which the work pieces are deburred is symmetrical and has a half-angle A. Figures 4 and 5 show alternative groove cross-sections. In Fig. 4 the bottom of the groove is flat, and in Fig. 5 the bottom is rounded, but in each the sides of the groove are angled from the flat, abutting surfaces by the half-angle A, as in Fig. 2.

Claims 1-4 are directed to appellant's deburring rolls per se. Each of these claims recites an edging roll comprising a pair of individual roll members and means to secure them together with their respective inner ends contiguous to one another. They further require that the mating portions of the roll members define a strip-receiving peripheral groove with inwardly converging inclined surfaces at an angle, with respect to a plane perpendicular to the axis of the roll member, not exceeding 15° (i.e., the half-angle A in Fig. 2).<sup>2</sup> Claims 1 and 2 are generic in scope; claim 3 (reciting that the peripheral groove is "V-shaped") is drawn to the species shown in Fig. 2; and claim 4 (reciting that the sides of the peripheral groove have "annular bottom surfaces") is subgeneric to the embodiments shown in Figs. 4 and 5. Claim 7 defines a combination comprising the edging roll of claim 1, means to force an edge of the strip into the groove of the roll, means to feed the strip past the roll, and means to support the roll for rotation about an axis perpendicular to the plane of the strip. Claim 8, which depends from claim 7, adds a second, coplanar edging roll which is used to force the edge of the strip into the peripheral groove of the first roll.

#### The References

The references relied on are:

Canda 1,428,142 Sept. 5, 1922

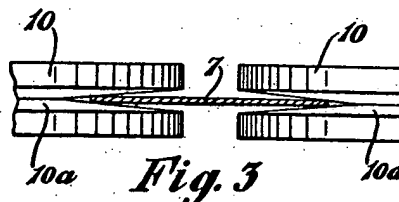
Wilson et al. (Wilson) 2,326,715 Aug. 10, 1943

Wilson is the principal reference. It discloses apparatus for the manufacture of thin

appellant's claims 1 to 8 \*\*\*." However, the board's decision did not affirm the rejection of claims 5 and 6; indeed, these claims have not been rejected. They have been withdrawn by the examiner from further consideration as drawn to non-elected species, and over the propriety of that determination neither we nor the board have jurisdiction. In re Hengehold, 58 CCPA 1099, 440 F.2d 1395, 169 USPQ 473 (1971).

<sup>2</sup> The maximum angle is said to insure that the burrs are compressed, or "coined," back into place, rather than abraded.

metal strips for use in Venetian blinds. Although the Wilson disclosure is primarily concerned with means for center-stretching such strips, prior to being advanced into the center-stretching means, the strips are passed between a pair of "edge rolls" which "are provided for removing the sharp edges of burrs from the side edges of the strip and for centering and guiding the strip into the stretching apparatus \*\*\*." These "edge rolls" are shown in Wilson's Fig. 3, in which the rolls are 10 and the thin metal strip is 7.



The half-angle of the V-shaped groove 10a measures about 6° on this drawing, but the specification says nothing about the angle.

Canda teaches that rolls for a ball rolling mill may be formed from a plurality of hardened steel disks secured together by means of bolts. In his Fig. 2, see page 27, each operating surface 5 is partly on each of two adjoining disks.

Furthermore, Canda expressly indicates that his "method of constructing rolls may be applied to other types [of rolls], as for instance, such rolls having V-shaped grooves \*\*\*."

#### The Rejection

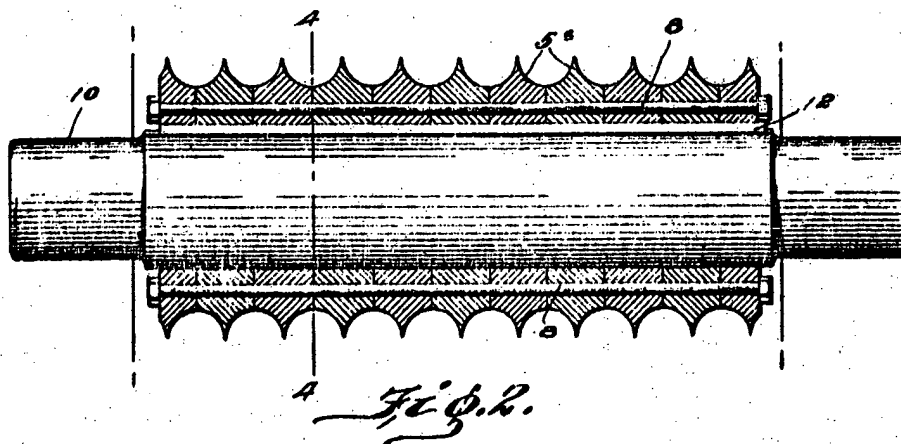
The examiner rejected claims 1-4, 7, and 8 under 35 U.S.C. 103 as unpatentable over Wilson in view of Canda. It was his position that

The only difference between Wilson's deburring rolls and the recited rolls is that Wilson's rolls are of a one piece construction while applicant's recited rolls comprise two members releaseably secured together by a series of bolts.

This difference he thought obvious in view of Canda's similar expedient in the ball-rolling apparatus.

The board affirmed the examiner's rejection, stating that

It appears to us that the Wilson et al. teaching of forming rolls 10 is adequate to direct persons of ordinary skill in the art to the use of rotatable edge contacting members having the forming groove angularity claimed. Such teachings have not been challenged by appellant. We agree with the



Examiner that it would be obvious to form such rolls of two parts with the separation at the apex of the forming groove. In the formation of such a grooved forming roll the problems of fabrication appear to us to reasonably lead to the use of two abutted parts as the obvious way of providing the required inner sharp angled recess. Machining of the roll 10 of Wilson et al. from an integral blank would present problems which are commonly avoided in the preparation of such shapes by the use of separable parts.

#### Appellant's Arguments

Appellant makes four arguments. First, he argues that the board erred in that it

\*\*\* treated diagrammatic drawings of the principal reference, Wilson et al., as working drawings, scaled the drawings to find a disclosure meeting a critical maximum angular limitation in all of appellant's claims but otherwise not disclosed in the specification of Wilson et al. either as to that critical maximum angle or its function and effect.

In support of this proposition, appellant cites In re Bager, 18 CCPA 1094, 1097-98, 47 F.2d 951, 952-53, 8 USPQ 484, 486 (1931), In re Wilson, 50 CCPA 827, 834, 312 F.2d 449, 454, 136 USPQ 188, 192 (1963), and In re Chitayat, 56 CCPA 1343, 1346, 408 F.2d 475, 478, 161 USPQ 224, 226 (1969). Second, he argues that

The reliance on Canda \*\*\* assumes the untenable premise that the art knew what appellant alone teaches, namely, the maximum total groove angle permissible for de-burring by coining thin metal strip was 30°, and the problem was merely how to obtain it.

Third, he argues that

\*\*\* the Board wholly overlooked that none of the references, singly or in combination, suggest the combination called for in Claims 7 and 8 \*\*\*.

And fourth, he similarly argues that

\*\*\* the Board wholly overlooked that none of the references, singly or in combination, suggest \*\*\* the specific groove root configuration called for by Claim 4, sub-generic to appellant's embodiment[s] disclosed in Figs. 4 and 5 (R. 15) of appellant's drawings.

#### OPINION

[2] Answering the first argument, as we said in Wilson, supra, "Patent drawings are not working drawings \*\*\*." However, we did not mean that things patent drawings show clearly are to be *disregarded*. In re Bager, also cited by appellant, is an example of a case in which the teachings of patent drawings, even as to features unexplained by the specification, proved dispositive. As this court there said, "Description for the purposes of anticipation can be by drawings alone as well as by words." In Wilson, as our opinion emphasizes, the attempted reliance was not only on a patent drawing per se, it was on "a greatly enlarged section of a small drawing obviously never intended to show the dimensions of anything." Here, Fig. 3 in the Wilson reference focuses on the edge rolls, showing them with great particularity and showing the grooves thereon to have an angularity well within the range recited in appellant's claims. Wilson, therefore, shows this aspect of subject matter lying within appellant's claims to be old.

[3] Appellant's second argument stresses



the criticality of the groove-angle *maximum* recited in his claims. However, claims are unpatentable when they are so broad as to read on obvious subject matter even though they likewise read on non-obvious subject matter. Here, appellant's claims read on edge rolls having a 6° groove angle and constructed from two mating parts. We have found that Wilson shows an edge roll having a 6° groove angle, and appellant no longer seriously relies on the two-part construction limitation. Appellant's claims are therefore unpatentable under § 103. Appellant's alleged discovery that the maximum groove angle for effective deburring is 30° cannot affect this result.

As for appellant's third argument concerning claims 7 and 8 in particular, we agree with the solicitor that Wilson clearly discloses (in a drawing we have not reproduced) a coplanar pair of edge rolls, means to feed the thin metal strip past the rolls, and, at least implicitly, means for rotationally supporting the rolls. Wilson thus shows the combination in which there is no novelty except the details of the roll of claim 1, which we have already held to be obvious. The added elements of these claims add nothing, so far as patentability is concerned.

As for appellant's fourth argument which is predicated on the annular groove root configuration parallel to the periphery recited in claim 4, the abbreviated record we have on appeal does not indicate that appellant argued that there was any patentable significance to that feature before either the board or the examiner. As we said in *In re Touvy*, 58 CCPA 809, 811-12, 435 F.2d 1342, 1344, 168 USPQ 357, 359 (1971), "Ordinarily we do not consider arguments directed to the significance of a particular limitation at this late stage unless they were raised below." Here, as there, we find that "The circumstances of this appeal do not warrant deviation from this rule."

The decision of the board is *affirmed*.

## Court of Customs and Patent Appeals

In re MALIN

No. 8666

Decided Mar. 9, 1972

### PATENTS

#### Particular patents—Hydrovehicle

Malin, Sailing Hydrovehicle, claims 1 to 6 of application refused.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Eugene F. Malin, Serial No. 716,261, filed Mar. 11, 1968; Patent Office Group 315. From decision rejecting claims 1 to 6, applicant appeals. Affirmed.

EUGENE F. MALIN, Fort Lauderdale, Fla., and JAMES H. LITTLEPAGE, Washington, D. C., for appellant.

S. WM. COCHRAN (R. V. LUPO of counsel) for Commissioner of Patents.

Before RICH, ALMOND, BALDWIN, and LANE, Associate Judges, and ROSENSTEIN, Judge, United States Customs Court, sitting by designation.

ALMOND, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the final rejection under 35 U.S.C. 103 of claims 1-6 of appellant's application "Sailing Hydrovehicle."<sup>1</sup> No claims have been allowed.

When under sail, the hulls of conventional sailing craft are subjected to "viscous, inertial, and wave drag" as they move through the water. These forces mechanically subtract from the vessel's efficiency. It appears that one way of overcoming or diminishing the effect of these mechanical "drags" on the hull of the craft is by "streamlining" the shape of the hull. Another known way to resolve the problem of hull drag is by use of a hydrovehicle which actually removes or "lifts" its hull out of the water while in "flight." Appellant's invention relates to such a hydrovehicle which may have hydrofoils and a sail so configured as to produce a lifting force on the craft as the sail takes on wind.

An abstract of appellant's disclosure, as set forth in the specification, states:

A wind propelled hydrovehicle comprising a combination of a vane for converting the force of the wind into a propelling force and a lifting force, and a buoyant body that

<sup>1</sup> Serial No. 716,261 filed March 11, 1968 as a continuation of application serial No. 565,837 filed July 18, 1966.

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faction of that need by the claimed invention and its superiority to the prior art, the case becomes highly persuasive. We find the prima facie obviousness to have been overcome.

The decision of the board as to all claims is reversed.

### Court of Customs and Patent Appeals

In re REYNOLDS

No. 8526

Decided June 10, 1971

### PATENTS

#### 1. Drawings — In general (§34.1)

##### Drawings — Disclosure in drawings only (§34.3)

Although patent drawing does not have to be to any particular scale, a person attempting to construct device following applicant's disclosure would have to distort significantly the relationships shown in drawing in order not to produce a device which would inherently perform recited function; in view of unusual shape of one part and eccentric mounting of another part, a person skilled in the art would suspect that there was some reason for relationships shown in drawing and would not regard such disclosure as accidental or arbitrary; drawing is sufficient disclosure to support claims.

#### 2. Amendments to patent application — In general (§13.1)

##### Specification — Sufficiency of disclosure (§62.7)

Question of whether applicant's device would function as intended without means and function of claim is not determinative since, by disclosing device that inherently performs function, applicant necessarily disclosed function; application may later be amended to recite function.

#### 3. Construction of specification and claims — Interference counts — Reference to source specification (§22.507)

On appeal from rejection for insufficient disclosure, of claims copied for interference purposes from a patent, court need not consider context in which claims originated since Patent Office does not take the view that they are ambiguous.

### Particular patents—Tuner

Reynolds, Continuously Adjustable UHF Tuner, claims 15 to 18 of application allowed; claims 9 to 14 refused.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Wayne H. Reynolds, Serial No. 343,281, filed Feb. 7, 1964; Patent Office Group 215. From decision rejecting claims 9 to 18, applicant appeals. Affirmed as to claims 9 to 14; reversed as to claims 15 to 18.

CORNELIUS J. O'CONNOR, Chicago, Ill. (HOMER R. MONTAGUE, Washington, D. C., and JOHN J. PEDERSON, Chicago, Ill., of counsel) for appellant.

S. WM. COCHRAN (FRED W. SHERLING of counsel) for Commissioner of Patents.

Before RICH, ALMOND, BALDWIN, and LANE, Associate Judges, and LANDIS, Judge, United States Customs Court, sitting by designation.

LANE, Judge.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 9-18, all the claims remaining in appellant's application serial No. 343,281, filed February 7, 1964, for "Continuously Adjustable UHF Tuner."

Appellant's application discloses a tuner for use in the UHF range (470 to 890 megacycles). The invention claimed is most readily understood by reference to the application drawing, which we reproduce in full on page 95.

Referring to Fig. 1, the tuner there disclosed consists of two preselector stages 12, 13 and an oscillator stage 15. Each stage is in the form of a tunable coaxial transmission line, with the inductors 22, 32, 42 forming the inner conductors and the chassis compartment walls forming the outer conductors. Each stage is tunable by virtue of a variable capacitor comprising a stationary plate and a pair of rotatable plates.

The stationary plates 24, 34, 44 consist of planar extensions of the corresponding inductors 22, 32, 42. The rotatable plates 26 and 36, which are conductively mounted on tuning shaft 17, are multi-slotted as seen in Fig. 2 and plates 46 are single-slotted at 47, as seen in Fig. 3. Each of the rotatable plates has a bendable tab portion 26', 36', 46', the function of which is to permit establishment of whatever minimum capacitance is necessary

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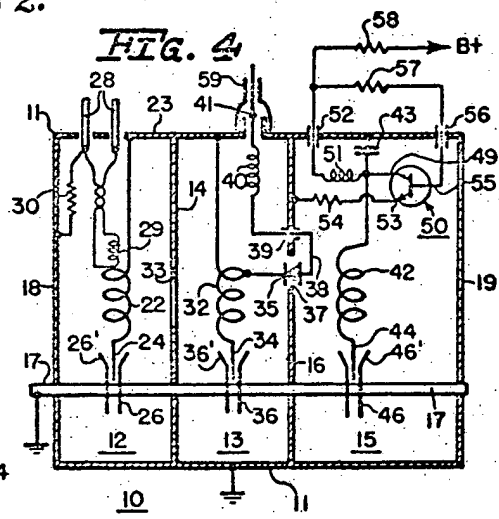
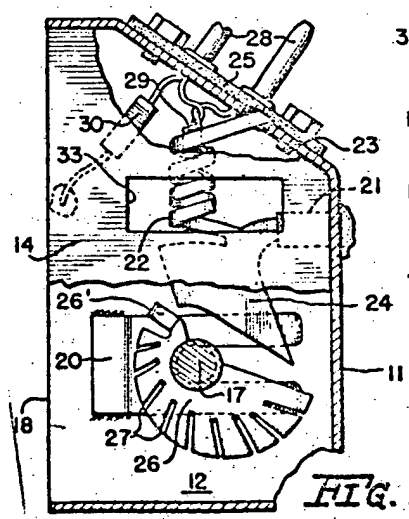
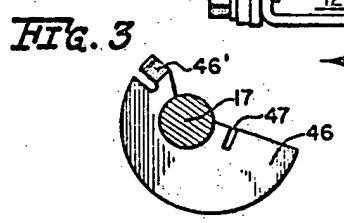
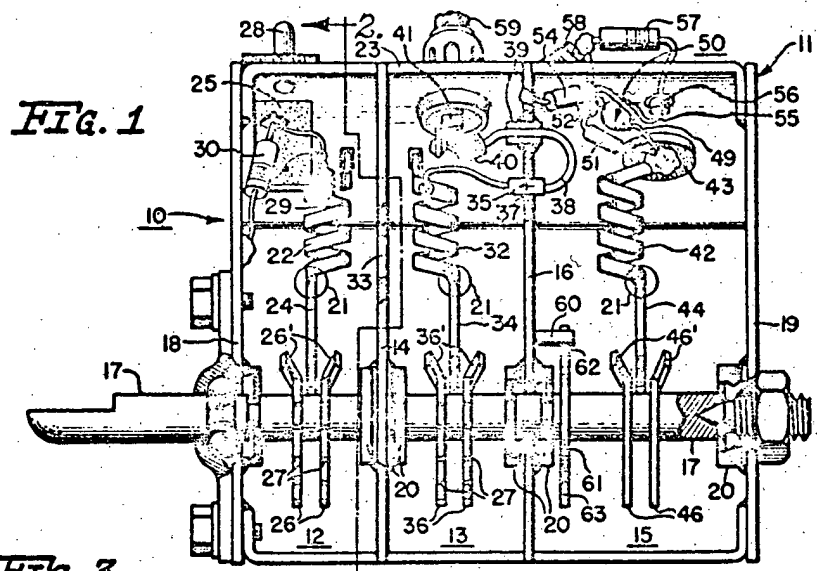
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to tune the stage to the highest-frequency channel in the UHF band. The slot in each of plates 46 is to permit bending of the major portion of those plates to tune to the lowest-frequency channel in the band. The other slots in plates 26 and 36 are to permit bending

of the various leaves of those plates so that the preselector stages will "track" the oscillator frequency over the entire band, i.e., the resonant frequency of each preselector stage is adjusted at each channel so that it is always displaced by 40 megacycles from the fre-

quency of the oscillator for proper mixing in coupling loop 38.

### The Obviousness Rejection

Claims 9-14 were rejected for obviousness. Claim 9, with additional paragraphing, letters, and numerals supplied, is as follows:

9. A continuously adjustable UHF tuner comprising:

(A) a housing having transversely disposed conductive walls defining a plurality of compartments;

(B) a control shaft extending through said compartments and rotatably supported by said walls;

(C) a plurality of tunable frequency selector circuits individually included within an assigned one of said compartments, each of said selectors comprising

(1) a multi-turn inductor spaced from the walls of its compartment to constitute therewith a transmission line section having an electrical length approximately equal to one-quarter wavelength at the high frequency end of its tuning band and

(2) an adjustable capacitor for tuning said selector over a band equal in width to the UHF band, said adjustable capacitor having

(a) a stationary electrode formed as an extension of an end turn of said inductor and having

(b) a movable electrode secured to said shaft for movement from a first position in which said capacitor exhibits minimum capacitance to tune said selector to the high frequency end of its tuning range to a second position in which said capacitor exhibits maximum capacitance to tune said selector to the low frequency end of said tuning range, and said movable electrode having

(i) a principal body portion and further having

(ii) another portion which is located at one end of and is transversely adjustable relative to said principal body portion and constitutes the predominant tuning adjustment for establishing said high frequency end of said tuning range.

Claims 10-13 depend directly from claim 9. Claim 10 adds the recitation that each capacitor has two movable electrodes; claim 11 recites that the rotatable electrode has a third portion, located at the opposite end of the principal portion, which is adjustable to establish the low-frequency (maximum capacitance) end of the tuning range; claim 12 recites that the transmission line sections of the selectors have essentially the same physical dimensions and that the stationary and movable

electrodes are essentially the same in size and configuration; claim 13 recites that the stationary electrode is a planar extension of the inductor and is disposed parallel to and offset from the inductor axis. Claim 14 depends from claim 13 and adds the limitation that a wall of the housing has an aperture to provide coupling between the selector stages.

The claims stand rejected as unpatentable over Carlson<sup>1</sup> in view of Giacoletto,<sup>2</sup> Reiches<sup>3</sup> and Eland.<sup>4</sup>

Carlson discloses a VHF-UHF tuner having two selector stages, each including a capacitively loaded coaxial transmission line for tuning through the UHF band. Appellant correctly points out that Carlson does not disclose the inductor and capacitor structures recited in appellant's claims. As to the capacitor, Carlson states only that it has fixed and rotatable sets of plates, with one set being mounted on the chassis and the other set connected to the central conductor of the transmission line. Appellant concedes that the broad idea of a compartmented chassis in which are formed tunable transmission line sections as UHF selector stages is old and relies for patentability on the structural details recited in the claims.

Giacoletto discloses a compartmented high-frequency tuner in which the rotatable capacitor plates are slotted to permit tuning adjustments. None of the leaves thus formed on the plates is disclosed as being intended to permit adjustment to establish the principal capacitance at the high-frequency end of the band.

Reiches and Eland each discloses the use of multi-turn inductors and capacitors having slotted, adjustable rotor plates. In each of these two patents, however, separate trimmer capacitors are used to establish the principal capacitance at the high and low frequency ends of the band.

Appellant's principal argument is that his claimed tuner eliminates the need for separate trimmer capacitors by providing bendable tabs on the rotor plates for this purpose. We are not persuaded by this argument. Given the bendable tuning plates of Giacoletto, we see no reason why one skilled in the art would not use an end leaf of Giacoletto's capacitor for the same purpose as appellant's "other portion at one end of" the principal body portion of the rotor plate if he wished to give up the advantages of separate trimmer capaci-

<sup>1</sup>U. S. Patent 3,252,096, May 17, 1966, filed Dec. 4, 1962.

<sup>2</sup>U. S. Patent 2,858,440, Oct. 28, 1958.

<sup>3</sup>U. S. Patent 2,819,391, Jan. 7, 1958.

<sup>4</sup>U. S. Patent 3,181,069, April 27, 1965, filed June 22, 1960.

tors. We agree with rate trimmer capacitor per se and purposes from a as in Eland, it is as in Eland, it is from outside the c

We find the obviousness to be s sion on claims 9-1

### The Rejection

Claims 15-18 : capacitor per se and purposes from a These claims are insufficient disclo graph of 35 U.S.C

Claim 15, with phasized, reads:

15. A variab cooperating ca movement with tween a first po of the capacitor ond position w capacitor is at : pacitor plates l auxiliary part, said one capaci other of said ca pacitor is in sai auxiliary part being adjustab said other capa the minimum c to be adjusted, one capacitor p other capacitor in its second po:

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<sup>5</sup>U. S. Patent 3,25

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tors. We agree with the examiner that a separate trimmer capacitor permits finer adjustment of minimum capacitance, especially if, as in Eland, it is adjustable by turning screws from outside the chassis after assembly.

We find the examiner's position on obviousness to be sound, and the board's decision on claims 9-14 is accordingly affirmed.

### The Rejection for Lack of Support

Claims 15-18 are drawn to a variable capacitor per se and were copied for interference purposes from a patent to Schatter et al.<sup>5</sup> These claims are not rejected on art but for insufficient disclosure, under the first paragraph of 35 U.S.C. 112.

Claim 15, with the limitation in issue emphasized, reads:

15. A variable capacitor comprising two cooperating capacitor plates mounted for movement with respect to each other between a first position wherein the capacitance of the capacitor is at a minimum and a second position wherein the capacitance of the capacitor is at a maximum, one of said capacitor plates having a main part and an auxiliary part, only said auxiliary part of said one capacitor plate being opposite the other of said capacitor plates when the capacitor is in said first position thereof, said auxiliary part of said one capacitor plate being adjustable toward and away from said other capacitor plate, thereby to allow the minimum capacitance of the capacitor to be adjusted, said auxiliary part of said one capacitor plate being not opposite said other capacitor plate when the capacitor is in its second position, said capacitor further

comprising means for preventing an abrupt change in the capacitance characteristic of the capacitor at the point where said auxiliary part of said one capacitor plate ceases to be opposite said other capacitor plate.

Claims 16-18 present no additional issues and need not be discussed here.

The examiner was of the view that appellant's application when filed contained no disclosure supporting the emphasized limitation. Appellant admitted that there was no express teaching in his specification of a structure for preventing abrupt change of capacitance as the auxiliary parts, i.e., tabs 26', 36', 46', departed from confronting relationship with the stationary plates 24, 34, 44. Neither is there any mention in the specification of the function recited in the portion of the claim in issue.

Appellant relied, however, on Fig. 2 of the drawing, supra, and contended that the structure therein shown would inherently perform the recited function. The examiner, while recognizing that the drawing can be used as disclosure in supporting claims, took the position that in order to perform the recited function of preventing an abrupt change of capacitance tab 26' in Fig. 2 would have to "form an angle with plate 24 when portion 26' ceases to be opposite plate 24" as plate 26 is rotated clockwise toward the maximum capacitance position.

Appellant argued that, as shown in Fig. 2, tab 26' would form an angle with the edge of plate 24 as the tab departed therefrom in clockwise rotation of plate 26. He illustrated his argument by presenting exhibit I with his amendment papers. We reproduce that exhibit.

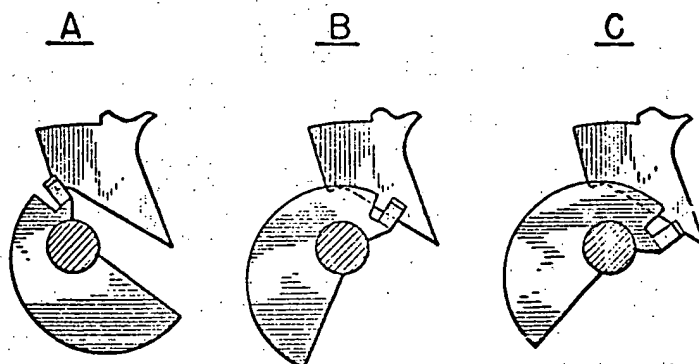


EXHIBIT I

<sup>5</sup> U. S. Patent 3,292,060, Dec. 13, 1966.

Position C in the exhibit shows the tab departing from confronting relationship with the plate. We think it clear that there is no substantial variance between the structure of Fig. 2 and of exhibit I, as far as the size, configuration and spacing of plate 24, shaft 17, plate 26, and tab 26' are concerned.

The examiner stated in his answer that appellant's argument was "mere conjecture unsupported by the original disclosure," and noted that "appellant's device will function for the intended use," i.e., tuning through the UHF band, "without the means and function of claim 15 and as such this claimed means is not inherent in the structure." The board stated that it was "in full accord with the position of the examiner as expressed in his Answer on this ground of rejection." We are not.

[1] First, we do not think appellant's position is "mere conjecture" in view of what is apparently a geometric certainty in Fig. 2. We realize that a patent drawing does not have to be to any particular scale. Nevertheless, a person attempting to construct a capacitor following appellant's disclosure would have to distort significantly the relationships shown in Fig. 2 in order not to produce a device which would inherently perform the recited function. In view of the unusual shape of plate 24 and the eccentric mounting of plate 26 on shaft 17, we think a person skilled in the art would suspect that there was some reason for the relationships shown in the drawing and would not regard such disclosure as accidental or arbitrary.

Second, the question of whether appellant's device would function as intended (continuous tuning through the band) without the means and function of claim 15 is not determinative. As was stated by the court in *Technicon Instruments Corp. v. Coleman Instruments, Inc.*, 255 F.Supp. 630, 150 USPQ 227 (N.D. Ill. 1966), *aff'd*, 385 F.2d 391, 155 USPQ 369 (7th Cir. 1967):

By disclosing in a patent application a device that inherently performs a function, operates according to a theory, or has an advantage, a patent applicant necessarily discloses that function, theory or advantage even though he says nothing concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter.

*Id.* at 640-41, 150 USPQ at 236.

[3] The Schatter patent, from which claims 15-18 were copied, was not included in the record before us. However, the Patent Office has not taken the view that the copied claims are ambiguous, and hence there is no

need at this point to consider the context in which they originated.

For the foregoing reasons, we conclude that appellant's application as filed did support claims 15-18, and the board's decision with respect to these claims is therefore reversed.

### Summary

The decision of the board is *affirmed* as to claims 9-14 and *reversed* as to claims 15-18.

### Court of Customs and Patent Appeals

MATSUSHITA ELECTRIC INDUSTRIAL CO.,  
LTD. v. NATIONAL STEEL CONSTRUCTION CO.

No. 8527

Decided June 10, 1971

### TRADEMARKS

#### 1. Identity and similarity — How determined — In general (\$67.4051)

Even though mark may be "weak" in sense of being a common word in common use as a trademark, it is entitled to be protected sufficiently to prevent confusion as to source from arising; decision must be based on realistic appraisal of likelihood of purchasers or prospective purchasers being confused as to source regardless of theoretical "weakness" of mark.

Appeal from Trademark Trial and Appeal Board of the Patent Office; 158 USPQ 468.

Trademark cancellation No. 8,751 by National Steel Construction Co. against Matsushita Electric Industrial Co., Ltd., Registration No. 754,002, issued Aug. 6, 1963, Registration No. 769,430, issued May 12, 1964, and Registration No. 769,858, issued May 19, 1964. From decision granting petition, registrant appeals. Affirmed.

DONALD A. GARDINER, JR., and SMITH, MICHAEL, BRADFORD & GARDINER, both of Arlington, Va., and W. DOUGLAS CAROTHERS, JR., and CAROTHERS & CAROTHERS, both of Pittsburgh, Pa., for appellant.

ORLAND M. CHRISTENSEN, GORDON R. SANBORN, and CHRISTENSEN, SANBORN & MATTHEWS, all of Seattle, Wash., for appellee.

Before RICH, ALMOND, BALDWIN, and LANE, Associate Judges, and LANDIS, Judge, United States Customs Court, sitting by designation.

RICH, Judge.

This is an appeal Patent Office. Trade Board in cancellation granting appellee's registrations, Nos. 769,858, of various NATIONAL. The registrations are: heaters, portable electric rice bakers, and portable.

The board's opinion in full at 158 USPQ ever, refers to and companion cancellation the same record, published Familiarity with the sumed.

The three registrations for composite word marks of registration 769,858 are illustrated in opinion wherein "Mark A" and "Mark B" mark of '430 is design. In opinion below here other two in that the of the mark, which other two, is the Japanese equivalent written the design portion wise like Mark A.

It is noted, with features of the marks, rely on them in argument of confusion, etc., but to concede legal identity and appellee's mark to it in 1951 for heaters, Reg. No. 5 portable air conditioner. Appellee has also found, prior use of electric heaters and o

It is not questioned appellee is the prior user.

With respect to the in the dominant field Japanese equivalent AL, the board held that foreign words, the English equivalent used on or registered might reasonably be the same source, Werke Wien Ges. USPQ 286 (Comm therein. There registration "CHAT NOIR" for of the prior registra

to form fluorophosphoric acid and water in an equilibrium reaction which favors the production of the fluorophosphoric acid. The examiner therefore considers it *inherent in Linn's process that fluorophosphoric acid is present and as such acts as an alkylation catalyst*. No [patentable] invention therefore is seen in the introduction of fluorophosphoric acid as such into the reaction zone rather than introduction of the component hydrofluoric and phosphoric acids. (Emphasis ours.)

The board said:

We are constrained not to affirm *this particular rejection* as in our opinion it rests too largely upon conjecture. (Emphasis ours.)

Thus we see that the "reversal" of the rejection on Linn in no way involved the relevance of Linn's disclosure of prior art knowledge of catalytic alkylation, upon which disclosure, except for the catalyst, claim 9 reads.

There has been no contention before us that if the rejection of the broadest claim was proper there are any significant limitations imparting patentability to the other claims. The decision of the board affirming the rejection of all of the rejected claims is therefore *affirmed*.

46 CCPA 933

Court of Customs and Patent Appeals

In re HEINRICH

Appl. No. 6449 Decided July 7, 1959

#### PATENTS

##### 1. Drawings—In general (§ 34.1)

Drawings—Disclosure in drawings only (§ 34.3)

Patentability — Anticipation — Drawings (§ 51.207)

Although patent drawings are not ordinarily considered to be working drawings drawn to scale, prior patent, wherein angle of taper is not specified but is shown in drawing to be less than  $7\frac{1}{2}^\circ$ , is relied on as principal reference against claims calling for taper of less than  $7\frac{1}{2}^\circ$ , since only reasonable interpretation of patent's disclosure is that very small angle of taper is to be used; since one skilled in art would normally use taper of less than  $7\frac{1}{2}^\circ$  in carrying

out teachings of patent, such an angle is fairly disclosed by patent.

##### 2. Patentability — Invention—In general (§ 51.501)

Patent may not be granted on basis of result which would flow naturally from teaching of prior art.

##### 3. Patentability—Substitution of equivalents (§ 51.65)

Substitution of leaf spring or diaphragm for coil springs is obvious expedient; both types of spring are well known and advantages and disadvantages of each are apparent; selection of one or the other for any particular installation is mere matter of choice or engineering design.

##### 4. Patentability—Evidence of—In general (§ 51.451)

Affidavits state that, despite affiants' familiarity with art, idea of constructing device in manner which applicant constructed it did not occur to them; fact that affiants did not happen to think of particular structure claimed is not convincing evidence that it was not obvious, particularly since it is not stated that affiants were familiar with patent which forms principal basis of rejection.

Particular patents—Sealing System Heinrich, Sealing System for Shafts and the Like, claims 32 to 39 of application refused.

Appeal from Board of Appeals of the Patent Office.

Application for patent of August H. Heinrich, Serial No. 409,213; Patent Office Division 29. From decision rejecting claims 32 to 39, applicant appeals. Affirmed.

BOSWORTH, SESSIONS, HERRSTROM & KNOWLES (CHARLES E. HERRSTROM of counsel) both of Cleveland, Ohio, for appellant.

CLARENCE W. MOORE (D. KREIDER of counsel) for Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, MARTIN, and SMITH, Associate Judges, and KIRKPATRICK, Judge.<sup>1</sup>

WORLEY, Chief Judge.

This is an appeal from the decision of the Board of Appeals of the United States Patent Office affirming the rejection by the Primary Examiner of Claims 32 to 39,

<sup>1</sup> United States Senior District Judge for the Eastern District of Pennsylvania, designated to participate in place of Judge O'CONNELL, pursuant to the provisions of Title 28, United States Code, Section 294(d).

clusive, of appellant's application for patent on a sealing system for shafts and the like. Claims 32 and 36, which are representative of the appealed claims, are as follows:

32. In a sealing system for shafts and the like, a sealing unit comprising a carbon sealing ring having a frusto-conical surface tapering at an angle which, projected against an imaginary reference plane paralleling the central axis of the sealing ring, measures less than  $7\frac{1}{2}^\circ$ ; annular metal mounting means for said sealing ring having a complementary frusto-conical surface tapering at the same angle, the frusto-conical surfaces of said metal mounting means and said carbon sealing ring engaging each other but overlapping at each end in a direction extending generally parallel to the central axis of the sealing ring; and, carrying said mounting means, a metal leaf spring of annular shape having an arcuate portion of short radius of curvature between its inner and outer peripheries.

36. In a sealing system for a shaft or the like, a sealing unit comprising a yieldable sealing ring having a frusto-conical surface tapering at an angle which, projected against an imaginary reference plane paralleling the central axis of the sealing ring, measures less than  $7\frac{1}{2}^\circ$ ; a non-yieldable mounting ring for said sealing ring having a frusto-conical surface tapering at the same angle, the frusto-conical surfaces of said sealing ring and said mounting ring engaging and overlapping each other in a direction generally paralleling the central axis of the sealing ring; and, carrying said mounting ring, a flexible metal diaphragm of annular shape the general plane of which extends transversely to the central axis of the sealing ring.

The references relied on are:

- Palmgren, 1,050,385, January 14, 1913.  
Lassen, 1,769,030, July 1, 1930.  
Weis, 1,898,278, February 21, 1933.  
Petrelli, 2,089,570, August 10, 1937.  
Murphy, 2,251,020, July 29, 1941.  
Vedovell, 2,395,359, February 19, 1946.

Appellant's alleged invention relates to a means for sealing a rotary shaft. In a preferred embodiment illustrated the shaft projects through a bushing and is provided at its end with a collet ring, the ring and bushing having smoothly finished annular surfaces which extend radially outward at right angles to the shaft and face each other across the space in which the sealing means is located. The sealing means comprises two identical units, each consisting of a metal

mounting ring mounted on the shaft, and a sealing ring of carbon or other non-metallic material which is frangible or yieldable surrounding and supported on the mounting ring. The outer surfaces of the mounting rings are frusto-conical and extend at an angle of  $7\frac{1}{2}$  degrees or less with respect to the axis of the shaft. The inner surfaces of the sealing rings have a corresponding frusto-conical shape so that they fit closely and overlappingly over the mounting rings and, when the sealing and mounting rings are pressed together in an axial direction, they engage with such a tight fit that the sealing rings must be broken or distorted in order to remove them. The sealing rings have smoothly finished radially extending faces which engage the correspondingly finished surfaces of the bushing and collet ring, respectively, to form seals.

The frusto-conical surfaces of the mounting rings are smaller at their outer ends, i.e., the ends adjacent the seals, so that the larger ends of the surfaces lie adjacent each other near the middle of the space between the bushing and the collet ring. Between the larger ends of the mounting rings there is located a spring device comprising a ring which surrounds and is spaced from the shaft, and a pair of outwardly facing annular leaf springs which extend axially inwardly from the ring and respectively engage the mounting rings so that those rings are urged outwardly along the shaft to force the sealing rings into engagement with the bushing and collet ring respectively. Each leaf spring comprises a generally flat inner portion joined to the outer ring by a portion of short radius of curvature.

The Weis patent discloses a sealing means for a pump shaft comprising a fixed sleeve which surrounds the shaft and is formed integrally at one end with a radially extending plate. Surrounding the opposite end of the sleeve is an annular retaining member provided at the end which faces away from the plate with a cavity having a frusto-conical wall. Received in the cavity is a split ring having a similar frusto-conical surface engaged with the cavity wall. The outer end of the ring is provided with a radially extending surface which sealingly engages a similar surface on a collar which rotates with the shaft. The retaining member is urged axially by a coil spring surrounding the shaft so that it tightly engages the split ring and forces the sealing surface of the latter into engagement with the collar. In his preferred form Weis provides a pin engaging the retaining member and the ring to prevent rotation of the latter, but he states that the clamping action



between the parts may be relied on for that purpose.

The patents to Lassen, Petrelli, and Murphy all show flexible diaphragms, generally corresponding to appellant's leaf springs, which urge packing members into sealing position.

The Vedovell patent shows an annular shaft sealing member, which may be of carbon, and which is urged radially into sealing engagement by means of a spring. The sealing ring is cylindrical and is press-fitted into a correspondingly shaped metal tube.

The Palmgren patent was not relied on by the board and is not as pertinent as the reference above discussed. Accordingly, it will not be considered in detail here.

[1] In the decision of the Board of Appeals the Weis patent is relied on as the principal reference. As explained above, that patent discloses appellant's claimed combination of a sealing ring and a mounting ring having engaging tapered surfaces, and a spring for urging the ring assembly into sealing position. Each of the appealed claims calls for a taper of less than  $7\frac{1}{2}^\circ$  as projected against a plane parallel to the axis of the sealing ring. Weis does not specify the angle of taper but the board stated that the taper shown in his drawing is less than  $7\frac{1}{2}^\circ$  and that statement is not questioned here by appellant. While it is true that patent drawings are not ordinarily considered to be working drawings drawn to scale, the only reasonable interpretation of the Weis disclosure is that a very small angle of taper is to be used and we are of the opinion that one skilled in the art would normally use a taper of less than  $7\frac{1}{2}^\circ$  in carrying out the teachings of the Weis patent, and that such an angle is, therefore, fairly disclosed by the patent.

The appealed claims distinguish over the Weis patent either in the material of which the sealing ring is made, the specific spring structure by which it is urged into sealing position, or both. The material is variously specified in different claims as being yieldable, frangible, or resilient, or, specifically, as being carbon. Appellant does not contend that sealing materials of the kinds claimed are new per se and, as above noted, the Vedovell patent shows a carbon sealing ring. It is appellant's position, however, that such materials, when associated with a metal mounting ring of the type claimed produce an unexpectedly improved device, in that a bond is produced which is so strong that it can be loosened only by breaking or deforming the sealing ring.

[2] Weis does not specify the material of which his sealing ring is made,

but it is evidently of such a nature as to form a firm bond with the mounting ring under working conditions since he states that the clamping action between the two may be relied on to prevent relative rotation. It would appear that the Weis disclosure contemplates the use of any known sealing material for the sealing ring and that it would be obvious that carbon or a resilient or yieldable material could be used for that purpose. Accordingly, even if it be assumed that such a material gave improved results, its use would not be patentable since a patent may not properly be granted on the basis of a result which would flow naturally from the teaching of the prior art. In re Kepler, 30 CCPA 726, 132 F.2d 130, 56 USPQ 177; In re Busch, 45 CCPA 766, 251 F.2d 617, 116 USPQ 413.

Moreover, in our opinion, it has not been shown that any new or unexpected result would be produced by making the sealing member of Weis of carbon or of a yielding or resilient material. The properties of such sealing materials are well known and it would be apparent that a tight joint might be obtained by pressing them against an appropriately shaped metal member. Vedovell shows a cylindrical carbon sealing member press-fitted into a similarly shaped metal member to form a tight joint and, in view of that showing, it would not be surprising to find that a similar joint would result if tapered members were used.

Appellant emphasizes the fact that the sealing ring of Weis is made in two parts, and alleges that such an arrangement would result in leakage. However, if it were found that such leakage took place it would be obvious that it could be avoided by forming the sealing member in one piece. It is to be noted, moreover, that the appealed claims are not limited to the use of a one-piece sealing member. Under such circumstances the fact that the sealing ring of the Weis patent is made in two parts does not materially lessen the pertinence of the patent as a reference.

[3] We agree with the board that the substitution of a leaf spring or diaphragm such as is shown in the Lassen, Petrelli, or Murphy patent for the coil spring of Weis would be an obvious expedient. Both types of spring are well known and the advantages and disadvantages of each are apparent. Accordingly, the selection of one or the other for any particular installation is merely a matter of choice or engineering design.

[4] There are of record several affidavits setting forth the advantages of appellant's sealing means and stating that, despite the familiarity of the affiants with the art, the idea of construct-

ing a seal in that manner to them. As above no opinion that the statement merely those which would follow from the teaching of the art. The fact that they open to think of the patent claimed here does not evidence that it was particularly since it is well known that affiants were familiar with the art which forms the basis of the rejection.

We have carefully considered the arguments advanced by appellant in oral argument and have found them unavailing and have affirmed the decision of the board. The decision of the board is affirmed.

46 CCPA 950

Court of Customs and  
THE SEAMLESS RUBBER  
ETHICON,

Appl. No. 6548 Dec

#### TRADEMARKS

1. Court of Customs and  
—Dismissing and  
15)

Commissioner reversing  
missing opposition and  
proceed to trial; Comm  
interlocutory order and  
appealable; section 21  
not permit appeals fr  
orders; applicant's app  
dismissed.

Appeal from Commis  
120 USPQ 114.

Trademark oppositio  
Ethicon, Inc., against  
Rubber Company, appli  
37,742, filed Apr. 8, 19  
reversing decision dism  
applicant appeals. App

RICHARD A. MAHAR  
KIRCHNER, both of V  
for appellant.

FRANCIS C. BROWNE, V  
for appellee.



ing a seal in that manner did not occur to them. As above noted, we are of the opinion that the stated advantages are merely those which would logically result from following the teachings of the prior art. The fact that the affiants did not happen to think of the particular structure claimed here does not afford convincing evidence that it was not obvious, particularly since it is not stated that affiants were familiar with the Weis patent which forms the principal basis of the rejection.

We have carefully considered all the arguments advanced by counsel for appellant in oral argument and in their extensive and carefully prepared brief, but we find no reversible error in the holding of the board that the appealed claims define nothing more than modifications of the Weis device which would be obvious to a skilled worker in the art.

The decision of the Board of Appeals is affirmed.

46 CCPA 950

#### Court of Customs and Patent Appeals

THE SEAMLESS RUBBER COMPANY v.  
ETHICON, INC.

Appl. No. 6548 Decided July 7, 1959

#### TRADEMARKS

##### 1. Court of Customs and Patent Appeals —Dismissing and remanding (§ 28.15)

Commissioner reversed decision dismissing opposition and ordered case to proceed to trial; Commissioner's order is interlocutory order and, as such, is not appealable; section 21 of 1946 Act does not permit appeals from interlocutory orders; applicant's appeal therefrom is dismissed.

Appeal from Commissioner of Patents; 120 USPQ 114.

Trademark opposition No. 37,545 by Ethicon, Inc., against The Seamless Rubber Company, application, Serial No. 37,742, filed Apr. 8, 1957. From order reversing decision dismissing opposition, applicant appeals. Appeal dismissed.

RICHARD A. MAHAR and ALBERT H. KIRCHNER, both of Washington, D.C., for appellant.

FRANCIS C. BROWNE, Washington, D.C., for appellee.

#### PER CURIAM.

Appellee's motion to dismiss this appeal raises the question as to the meaning and effect of Sec. 21 of the Trademark Act of 1946, providing, *inter alia*, for appeals to this court. This is a trademark opposition instituted by appellee which was dismissed January 31, 1958, by the Examiner of Trademark Interferences upon appellant's (applicant's) motion. From this dismissal, appellee-opponent appealed to the Commissioner of Patents on January 15, 1959. Assistant Commissioner Leeds reversed the decision of the Examiner of Interferences and ordered the case to proceed to trial. Appellant has appealed from this ruling.

[1] The order of the Assistant Commissioner is an interlocutory order, and, as such, is not appealable. *Master, Warden, etc. v. Sheffield Steel Corp.*, 42 CCPA 726, 215 F.2d 285, 103 USPQ 54, and cases there cited.

There is nothing in Sec. 21 of the Trademark Act of 1946 which permits appeals from interlocutory orders.

Appellee's motion to dismiss the appeal is granted, and the appeal is dismissed.

WORLEY, Chief Judge, and O'CONNELL, Judge, did not participate because of illness.

#### Commissioner of Patents

In re UNITED STATES PLYWOOD  
CORPORATION

Decided Aug. 4, 1959

#### TRADEMARKS

##### 1. Pleading and practice in Patent Office —In general (§ 67.671)

One applicant is not entitled to be heard in connection with *ex parte* prosecution of another's application, either before, during, or after adversary proceeding in which the two applicants may be involved.

Application for registration of trademark of United States Plywood Corporation, Serial No. 50,126. On petition. Petition denied.

JAMES M. HEILMAN and HEILMAN & HEILMAN, both of New York, N.Y., for United States Plywood Corporation.

**APPENDIX E**

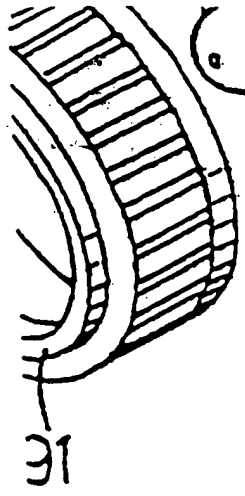


FIG. 17

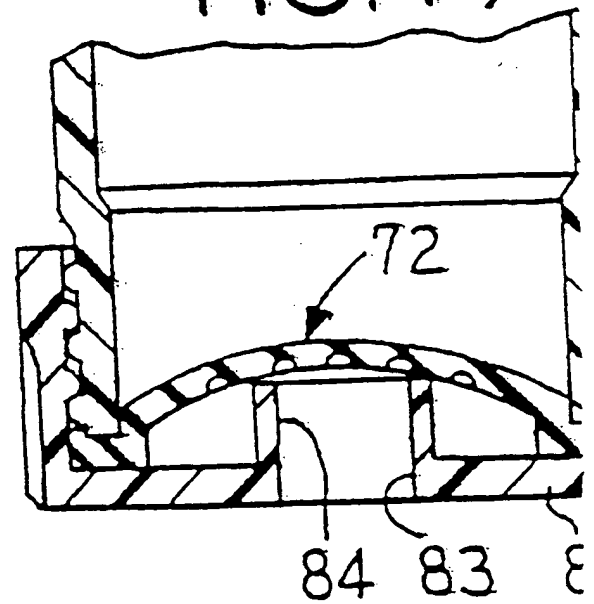
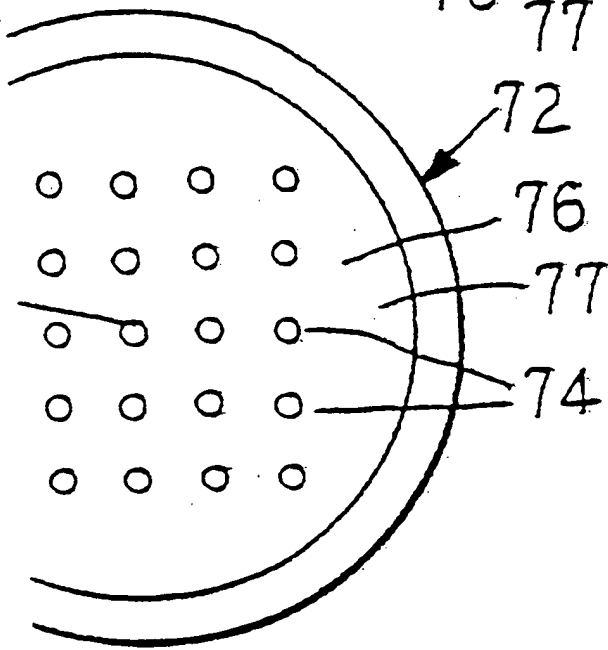
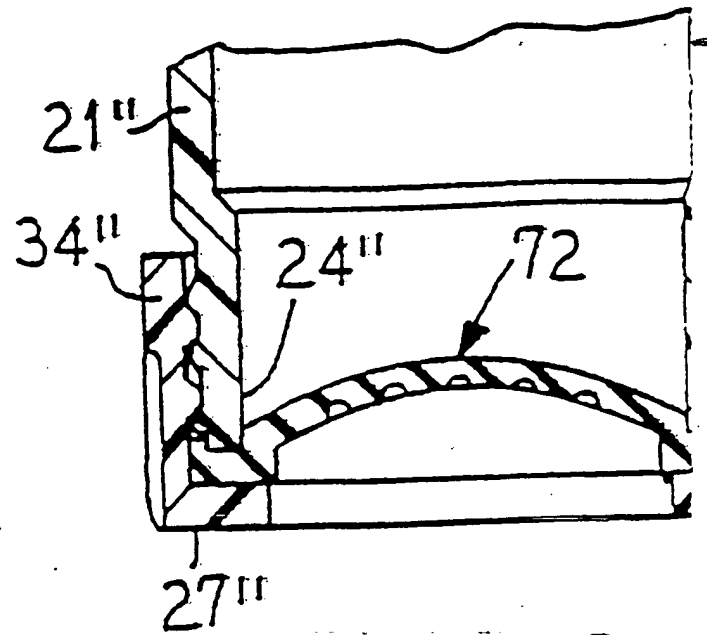
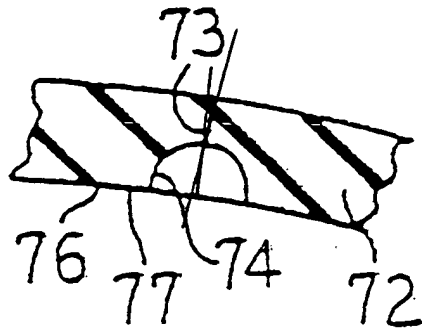


FIG. 16

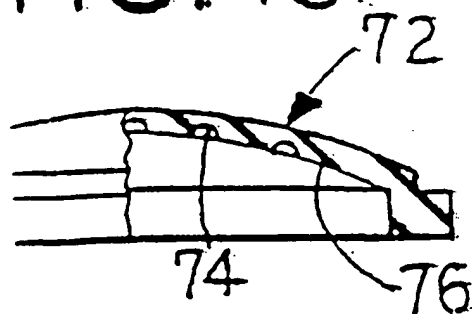


FIG. 20

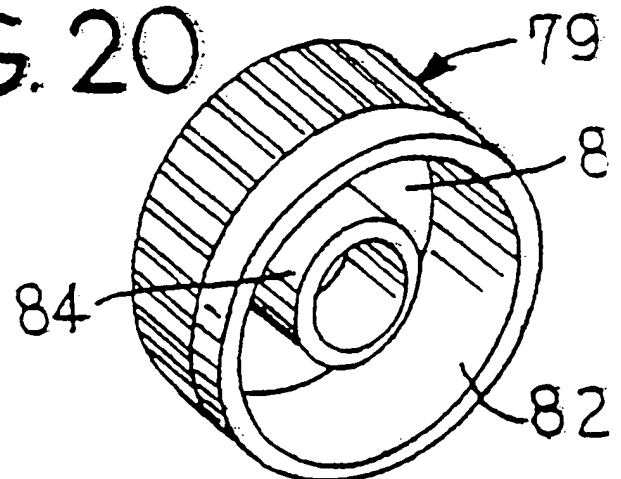


FIG. 22



**APPENDIX F**

CONFIDENTIAL AND PRIVILEGEDEXHIBIT II

3/28/2000

460.1891USU

DECLARATION OF FRANCIS X. MANGANIELLO

I, Francis X. Manganiello, hereby declare as follows:

1. I graduated from Northeastern University with a degree in mechanical engineering in 1965. Since then, I have been employed as a mechanical engineer.
2. From 1965 to 1985, I was employed by The Gillette Company as a Senior Project Engineer. My primary responsibilities were to design and develop a wide range of personal care products.
3. From 1985 to 1995, I was Director and Vice President, Design Engineering of Pre-School Toys at Hasbro, Inc.
4. Since January of 1995, I have been employed by Playtex Products, Inc. ("Playtex") as the Director of Research and Development of the Infant Care business.
5. I have approximately five years of experience in the area of venting baby feeding bottles to allow air to flow into the bottle to alleviate the vacuum created in the bottle during feeding. I am a named inventor in four U.S. patents. One patent relates to the venting of baby feeding bottles. I consider myself to be an expert in the venting of baby feeding bottles.

6... Playtex is the assignee of U.S. Patent Application Serial No. 09/209,070, filed December 10, 1998 (the "Application"), and U.S. Provisional Application 60/069,083 filed December 10, 1997 (the "Provisional") on which the Application claims priority.

7. I am familiar with the Application and the Provisional (hereafter collectively referred to as "the Applications").

8. I am also familiar with U.S. Patent No. 5,499,729, filed March 15, 1994, and assigned to Greenwood et al on March 19, 1996 (the Patent).

9. Playtex has been licensed under the Patent since its issuance.

10. Prior to my employment with Playtex, Mr. Greenwood, an inventor of the Patent, came to Playtex and disclosed his technology to Playtex. After I joined Playtex, I spoke with him by phone approximately four times.

11. Mr. Greenwood provided Playtex with about 1000 domed vent discs. Each vent disc had 36 domed depressions in its underside. The residual material of the vent discs above some of the depressions was punctured through. He told me the puncture holes were made one at a time by hand using a push pin (a pin with a pointed tip with an axially aligned cylindrical head). He never disclosed to me or Playtex any other way, means or system to puncture, pierce or perforate vent discs.

12. At no time did Mr. Greenwood disclose or suggest to me or Playtex that the puncture holes or perforations through the residuals of the vent discs should be perpendicular to the surface to be pierced, or, along or coincident with radii that form the curvature of the domed portion of the discs.

13. At no time did Mr. Greenwood disclose or suggest to me or Playtex that the center lines of the depressions were or were to be coincident with radii that form the dome curvature of the discs, or that the puncture holes or perforations extend or should extend along the center lines of the depressions.

14. At no time did Mr. Greenwood disclose or suggest to me or to Playtex any apparatus or method for simultaneously or automatically puncturing, perforating or otherwise forming the claimed perforations through vent discs.

15. At no time did Mr. Greenwood disclose his patent application for the Patent or the Patent to me.

16. At no time did Mr. Greenwood disclose to me or to Playtex to use slits or that the perforations, punctures or holes should be slits. All of the punctures of the vent discs made by Mr. Greenwood were holes. None were slits.

17. I do not believe that Mr. Greenwood had, but was withholding from Playtex, information on how to make, or on an automated mechanism or method or system for simultaneously making, puncture holes in the residuals of vent discs.

18. At Playtex, I had the responsibility for and supervised the development of the subject matter disclosed in the Application.

19. Prior to the filing of the Provisional, Playtex obtained domed vent discs from Mr. Greenwood's manufacturer of vent discs. The vent discs had domed depressions therein, but the discs were not punctured. We tried puncturing the residual material above each of the 36 domed depressions of the discs by hand with a push-pin. However, we found that the vent discs did not perform satisfactorily and could not be commercialized. Playtex found that the puncture holes formed with push-pins caused tearing of residual vent disc material. It was found that the punctured vent discs sometimes leaked due to the puncture holes.

20. On or about November 8, 1995, Playtex conducted a home panel test (HPT NO.: 95-36) of vent discs that were obtained from Mr. Greenwood's vent disc manufacturer and that Playtex employees pierced by hand with a push pin, as disclosed to us by Mr. Greenwood. Results of the test showed that the nipples of the baby bottles having vent discs with the pierced puncture holes therein sometimes collapsed while the babies of the panel testers tried to suck liquid from the bottles. Nipple collapse indicated to Playtex that too much suction force was required to draw liquid from the bottles because the pierced vent holes of the vent discs were not operating properly. Thus, sometimes, the pierced vent holes did not let air in



quickly enough to properly vent the bottles. The results also showed that pierced holes of the vent discs sometimes leaked.

21. The inventor of the subject matter disclosed and claimed in the Applications, Mr. Chomik, joined Playtex on or about May, 1996. Mr. Chomik was hired as a project engineer and at that time was assigned to work for me. His first project was to develop a commercial vent disc for baby feeding bottles. He was made aware of what Mr. Greenwood had disclosed to Playtex.

22. I am familiar with the U.S. Patent and Trademark Office Action in which the Examiner rejects independent claims 1 and 2 of the Application. The Office Action states that these claims are taught by the Patent.

23. I do not agree with the rejection or with the grounds of rejection.

24. Fig. 19 does not show a vent disc with a plurality of perforations therethrough. There are no perforations in Fig. 19.

25. Fig. 17 does not show a plurality of perforations. Fig. 17 shows only one perforation.

26. The perforation shown in Fig. 17 does not extend along radius that forms the curvature of the domed portion of the vent disc.

27. In Fig. 17, the line representing the perforation is on an angle (not perpendicular) to the inner surface of the residual of the depression that is to be pierced, and it does not appear to extend along radii that form the curvature of the domed portion of the vent disc. Proof that the perforation line is at an angle (not perpendicular) to the surface of the residual of the depression is shown in the enlargement of Fig. 17 attached hereto as Exhibit A.

28. With regard to Fig. 17, the Office Action states that perforations 73 and 74 are inclined at an angle with respect to the vertical of vent disc 72. Assuming the Examiner means that the perforation line is at an angle to the vertical axis through the bottle and through the vent disc, this does not necessarily or without doubt mean that the perforation line is perpendicular to the inner surface of the residual to be pierced, or that the line is along radii that form the curvature of the domed portion of the vent disc.

29. The Office Action states that line or perforation 73 bisects perforation 74 in two. I disagree. First, the number 74 refers to a recess, not a perforation (see, Column 8, line 62). Second, while the point at which the perforation enters the residual may bisect the diameter of the depression, that does not necessarily mean that perforation line 73 is perpendicular to the surface of the residual to be pierced, or is on or coincident with the radius that forms the curvature of the dome of the vent disc.

30. The Office Action states that Fig. 17 is drawn such that line 73 has minimal length in the residual area which would indicate that both of the perforations are perpendicular to the surface to be pierced, and consequently, that the plurality of perforations extend along radii that form the curvature of the domed portion. Again, I disagree. As stated above and as clearly shown in the enlargement, line 73 is not drawn perpendicular. Therefore, line 73 does not have minimal length, and one cannot conclude that the plurality of perforations extend along the radii that form the curvature of the domed portion.

31. Fig. 17 is disclosed in the Patent as being a sectional view taken through a single diaphragm aperture in the diaphragm of Fig. 15 (Column 3, lines 21-23). Since Fig. 17 shows only one aperture, one cannot tell whether each recess 74 is perforated, which aperture of Fig. 15 is sectioned, or from which direction the reader is viewing the section. For these reasons, one cannot say necessarily or without doubt that Fig. 17 teaches the invention claimed in the Application.

32. The Patent discloses that in Fig. 17, aperture 73 is a point (Column 8, lines 40-41) formed by a straight pin puncture (Column 8, lines 57-59). Thus, aperture 73 is not a slit.

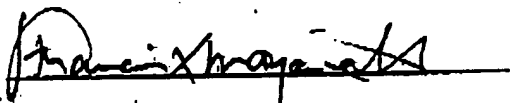
33. The Patent does not disclose or suggest the invention defined in the claims of the Application.

34. Because vent discs perforated by hand with push-pins as suggested by an inventor of the Greenwood patent sometimes leaked and sometimes did not vent properly, such vent discs could not be commercialized.

35. The vent disc invention recited in the claims of the Application is a commercial success. The vent disc has been employed in baby bottles commercially sold in the United States since 1998. Since then, over five million of the baby bottles have been sold in the U.S.

36. I believe the sales of the baby bottles since 1998 when the vent disc of the invention was used in the baby bottles, are primarily due to the presence and successful operation of the vent disc in the bottles.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

By 

Francis X. Manganiello  
Date: March 28, 2000.

EXHIBIT A

FIG. 18

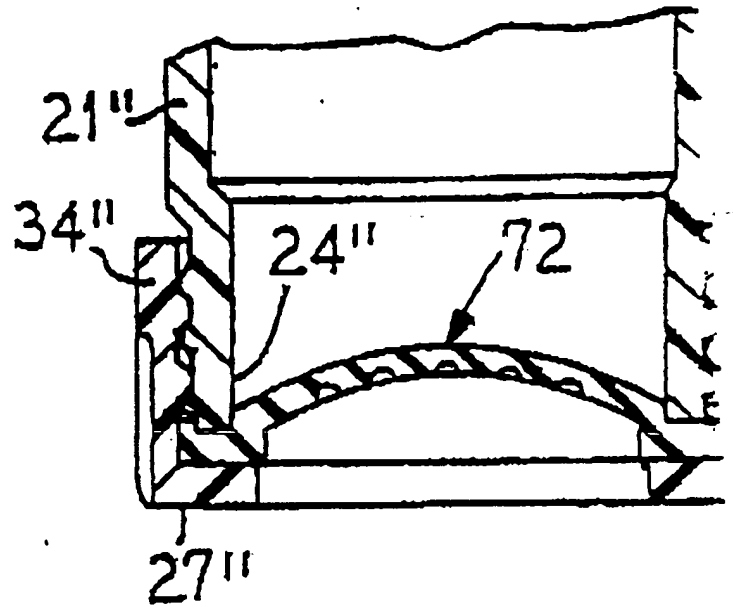


FIG. 17

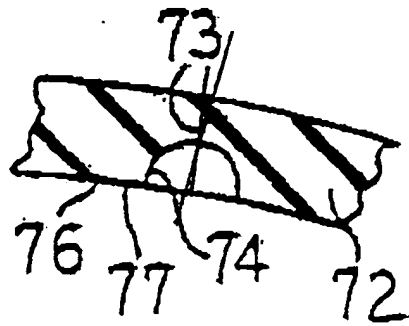
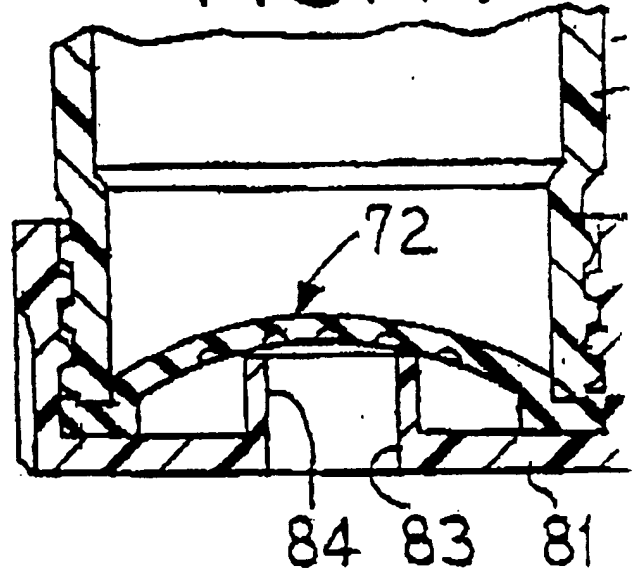


FIG. 19



3.15

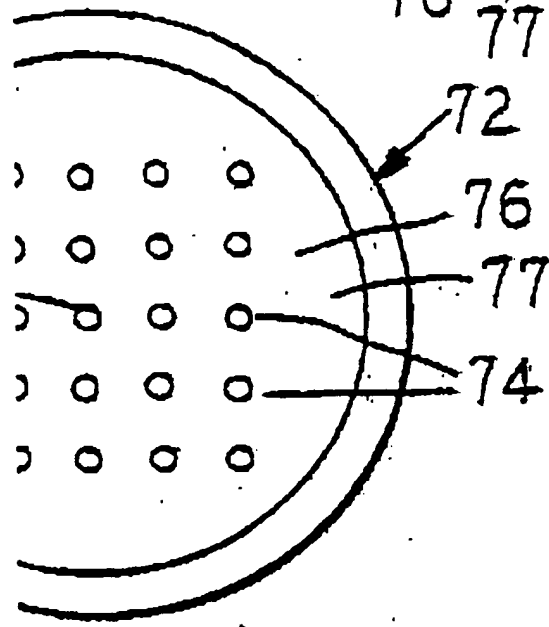


FIG. 20

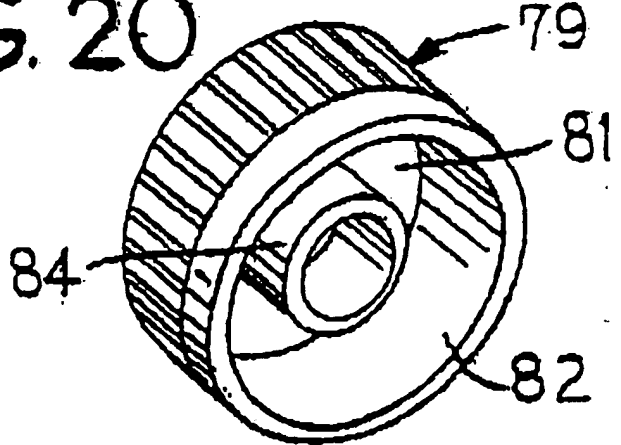


FIG. 16

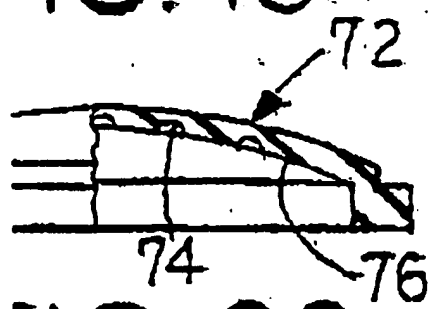


FIG. 22

FIG. 21

71

**APPENDIX G**

CONFIDENTIAL and PRIVILEGED

EXHIBIT III  
3/28/00

460.1891USU

DECLARATION OF RICHARD S. CHOMIK

I, Richard S. Chomik, hereby declare as follows:

1. I graduated from The New Jersey Institute of Technology with a Bachelor of Science degree in mechanical engineering technology in 1992.
2. From January 1989 through May 1996, I was employed by G.R. Technical Services as an Associate Engineer and Project Engineer.
3. Since May of 1996, I have been employed by Playtex Products, Inc. ("Playtex") in its Infant Care business. I started as a Product Development Engineer. From 1998 to January 2000, I was the Senior Design Engineer, and currently I am the Group Leader for that business.
4. I have approximately four years of experience in the area of venting baby feeding bottles to allow air to flow into the bottle to alleviate the vacuum created in the bottle during feeding.
5. Playtex is the assignee of U.S. Patent Application Serial No. 09/209,070, filed December 10, 1998 (the "Application"), and U.S. Provisional Application 60/069,083 filed December 10, 1997 on which the Application claims priority (the "Provisional").

6. I am familiar with the Application and the Provisional (hereafter collectively referred to as "the Applications").
7. I am also familiar with U.S. Patent No. 5,499,729, filed March 15, 1994, and issued to Greenwood et al on March 19, 1996 (the "Patent").
8. Since May of 1996, I have reported to Mr. Frank Manganiello, Director of Research and Development for the Infant Care business of Playtex. My first project was to develop a commercial vent disc for the bottom of a baby bottle ("The Project"). I became familiar with the vent disc technology that was disclosed to Mr. Manganiello and to Playtex by Mr. Greenwood, one of the inventors of the Patent.
9. I never met Mr. Greenwood. I only spoke with him one or two times.
10. When I started working on the Project, Playtex had domed vent discs that had domed depressions extending upwardly into the underside of the vent discs. The residual material of the vent discs above the depressions had puncture holes therethrough. The puncture holes were formed one at a time by hand by Playtex personnel using a draftsman's compass or a push pin (a pin with a pointed tip with an axially aligned cylindrical head).
11. When Playtex needed additional vent discs to work on, they were supplied to Playtex by Mr. Greenwood's manufacturer of vent discs. The vent discs Playtex



received from Mr. Greenwood's manufacturer were domed and had domed depressions, but were not punctured.

12. When I started on the Project, Playtex was using a draftsman's compass or a push-pin to puncture the residuals above the domed depressions of the vent discs received from Mr. Greenwood's manufacturer.

13. When I started on the Project, all of the punctured vent discs at Playtex had puncture holes made by hand with a draftsman's compass or push-pin.

14. When I started on the Project, I was advised that vent discs having the puncture holes made by hand with a compass or push-pin by Playtex had been home panel tested (the "First Panel Test"). Results of the First Panel Test showed that the nipples of the baby bottles having the vent discs with pierced puncture holes therein sometimes collapsed while the babies of the panel testers tried to suck liquid from the bottles. Nipple collapse indicated to Playtex that too much suction force was required to draw liquid from the bottles because the pierced vent holes of the vent discs were not operating properly. Thus, sometimes the pierced vent holes did not let air in quickly enough to properly vent the bottles. The results also showed that pierced holes of the vent discs sometimes leaked.

15. I used a comparator to examine hand-made puncture holes through vent discs that Playtex had on hand. I found that the puncture holes were randomly formed. They were random in terms of point of entry, angle, and contact/seal

surface area (the latter meaning the surface areas of the wall of the puncture hole that contact each other and/or seal against each other). The puncture holes entered the residual material at various points on the interior surface of the domed depressions and the puncture holes were disposed at various angles through the residuals. Further, the surfaces of the walls of the puncture holes did not correspond to the smooth surface of the compass point or push-pin that formed the holes. The puncture holes were rough and uneven. The edges defining the holes were jagged. It was clear to me that during piercing of the vent disc, the points and pins tore the residual material of the vent disc. Because of this, the puncture holes did not have smooth contact/seal surfaces. They did not form good seals and they sometimes leaked.

16. To solve the leakage problem, I tried piercing the residuals of a small number of the vent discs by hand with a blade having conical (when viewed in vertical section), angular flat surfaces that formed an elongated horizontal sharp tip, as shown in the drawings of the Application. I found that the resulting perforations were slits that had uniform, smooth side edges or wall surfaces that provided adequate surface contact area and adequate smooth seal surface area. This solved the leakage problem.

17. To eliminate the randomness of the puncture holes, I decided that the perforations, preferably slits, should be formed automatically so that they would be substantially uniformly or identically and consistently formed through the residuals of the vent disc.

18. I reviewed a drawing that was made by a Playtex employee, Paul Thom. He made the drawing upon the instructions of Mr. Manganiello. A copy of the drawing is attached hereto as Exhibit A. The drawing shows a vertical section through a domed vent disc having dimples or depressions extending upwardly into the domed central panel of the vent disc. The drawing shows that the axes or centerlines of the depressions radiate from the center of the sphere of the domed portion of the vent disc. Thus, the drawing shows that the center lines of the depressions are coincident with the radii that form the curvature of the domed central panel of the vent disc. The drawing also shows an enlarged vertical section through a portion of a vent disc having a depression therein and shows a line drawn through the center of the depression and through the residual of vent disc material above the depression. Upon observing the drawing, I had the idea to form the perforations automatically and normal, i. e., perpendicular, to the surface of the vent disc to be pierced, or, along radii that form the curvature of the domed portion of the disc, or along the center lines of the depressions, which center lines are along radii that form the curvature of the domed central panel, as disclosed and claimed in the Application. I decided that in order to have a vent disc that could be commercial and to be able to produce commercial vent discs, I had to eliminate the randomness of the perforations. I realized that to do that, the perforations should be formed as stated above, i.e., in accordance with my idea, automatically, consistently and substantially identically, preferably as slits formed by blades having tips as described in paragraph 16 herein.

19. I then developed the apparatus and method disclosed and claimed in the Application. I started with a hand operated bench model apparatus that had a vertically reciprocable table on which a blade, as described in paragraph 16, was mounted. The domed central panel area of vent discs had domed depressions therein as shown in the drawing of Mr. Thom. With the bench model, the domed central panel areas of the vent discs were flattened and the residuals of the domed depressions of the flattened vent discs were pierced. The perforations were made along the radii and center lines, as described in paragraph 18 above.

20. I tested the vent discs that were pierced as described in paragraph 19 above. I found that the perforations of these vent discs did not leak and vented sufficiently to prevent nipple collapse. I also did comparative tests of vent discs whose residuals had hand-made random puncture holes made by Mr. Greenwood and by Playtex.

21. The comparative tests showed that improved, optimum air venting and no leakage occurred with the perforations made with the bench model apparatus according to paragraph 19.

22. About the middle of November of 1996, Playtex conducted a second home panel test (the "Second Panel Test") using baby bottles having nipples and domed vent discs supplied to Playtex by Mr. Greenwood's manufacturer and whose residuals were pierced by use of the bench model apparatus and in the manner described in paragraph 19 above.

23. Results of the Second Panel Test showed that the vent discs and nipples of the baby bottles performed satisfactorily. Although the some panel testers reported some bottle leakage, upon further consultation with the panel testers and further testing, it was determined that the leakage was not due to the perforations. The vent discs did not leak from the slits. The results of the Second Panel Test also showed that venting was satisfactory. Thus, the vent discs that were panel tested were significantly improved over the vent discs that had hand-pierced vent holes formed with a compass or push-pin and that were tested in the First Panel Test.

24. Since the testing of the vent discs that were pierced randomly by hand with a compass or push-pin and that had puncture holes at various angles did not vent as well as the vent discs that were perforated according to paragraph 19 hereof, I determined that when the plurality of perforations were at an angle, even a slight angle, from perpendicular to the surface to be pierced, venting would be over longer (not the shortest) paths and would create a greater propensity for nipple collapse. I concluded therefore that with the longer paths, venting would be negatively affected. Since a bottle nipple can only withstand a limited amount of negative pressure, a plurality of perforation lines at an angle perpendicular to the surface to be pierced, or to the radii or the center lines coincident with the radii, would or could significantly deleteriously affect the venting performance of the vent disc.

25. At no time did Mr. Greenwood disclose or suggest to me or Playtex that the puncture holes or perforations through the residuals of the vent discs should be perpendicular to the surface to be pierced, or along or coincident with radii that form the curvature of the domed central panel of the discs, or that the center lines of the depressions were or were to be coincident with radii that form the domed curvature of the discs, or that the perforations should extend along the center lines of the depressions.

26. At no time did Mr. Greenwood disclose to me or to Playtex any apparatus or method for simultaneously perforating or forming the claimed perforations through vent discs.

27. At no time did Mr. Greenwood disclose his patent application for the Patent or the Patent to me, or to Playtex.

28. At no time did Mr. Greenwood disclose to me or to Playtex to use slits or that the perforations, punctures or holes should be slits. All of the punctures of the vent discs that I saw prior to my developing the blade and bench model apparatus described above were holes. None were slits.

29. I am familiar with the U.S. Patent and Trademark Office Action in which the Examiner's rejected independent claims 1 and 2 of the Application. The Office Action states that these claims are taught by the Patent.

30. I do not agree with the rejection or with the grounds of rejection.

31. Fig. 19 does not show a vent disc with a plurality of perforations therethrough. There are no perforations in Fig. 19.

32. Fig. 17 does not show a plurality of perforations. Fig. 17 shows only one perforation.

33. The perforation in Fig. 17 does not extend along the radius that forms the curvature of the domed portion of the vent disc.

34. In Fig. 17, the line representing the perforation is on an angle (not perpendicular) to the inner surface of the residual of the depression that is to be pierced, and it does not appear to extend along radii that form the curvature of the domed portion of the vent disc. Proof that the perforation line is at an angle (not perpendicular) to the surface of the residual of the depression is shown in the enlargement of Fig. 17 attached hereto as Exhibit B.

35. With regard to Fig. 17, the Action states that perforations 73 and 74 are inclined at an angle with respect to the vertical of vent disc 72. Assuming the Examiner means that the perforation line is at an angle to the vertical axis through the bottle and through the vent disc, this does not necessarily or without doubt mean that the line is perpendicular to the surface of the residual to

be pierced, or that the line is along the radii that form the curvature of the domed portion of the vent disc.

36. The Office Action states that line or perforation 73 bisects perforation 74 in two. I disagree. First, the number 74 refers to a recess, not a perforation (see, Column 8, line 62). Second, while the point at which the perforation enters the residual may bisect the diameter of the depression, that does not necessarily or without doubt mean that the perforation line 73 itself is perpendicular to the surface of the residual to be pierced, or is on or coincident with the radius that forms the curvature of the vent disc.

37. The Office Action states that Fig. 17 is drawn such that line 73 has minimal length in the residual area which would indicate that both of the perforations are perpendicular to the surface to be pierced, and consequently, that the plurality of perforations extend along radii that form the curvature of the domed portion. Again, I disagree. As stated above and clearly shown in the enlargement, line 73 is not drawn perpendicular. Therefore, line 73 does not have minimal length, and one cannot conclude that the plurality of perforations extend along the radii that form the curvature of the domed portion.

38. Fig. 17 is disclosed in the Patent as being a sectional view taken through a single diaphragm aperture in the diaphragm of Fig. 15 (Column 3, lines 21-23). Since Fig. 17 shows only one aperture, one cannot tell whether each recess 74 is perforated, or which aperture of Fig. 15



is sectioned, or from which direction the reader is viewing the section. For these reasons, one cannot say necessarily or without doubt that Fig. 17 teaches the invention claimed in the Application.

39. The Patent discloses that in Fig. 17, aperture 73 is a point (Column 8, lines 40-41) formed by a straight pin puncture (Column 8, lines 57-59). Thus, aperture 73 is not a slit.

40. The Patent does not disclose or suggest the invention defined in the claims of the Application.

41. Because vent discs perforated by hand with push-pins as suggested by an inventor of the Greenwood patent sometimes leaked and sometimes did not vent properly, such vent discs could not be commercialized.

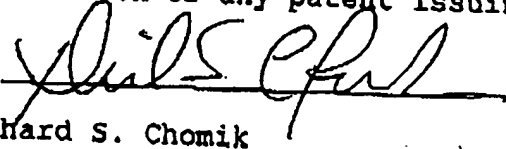
42. The vent disc invention recited in the claims of the Application is a commercial success. The vent disc has been employed in baby bottles commercially sold in the United States since 1998. Since then, over five million of the baby bottles have been sold in the U.S.

43. I believe the sales of the baby bottles since 1998 when the vent disc of the invention was used in the baby bottles, are primarily due to the presence and successful operation of the vent disc in the bottles.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

By

  
Richard S. Chomik

Date: March 28, 2000.

PLASTEX PRODUCTS, INC. 215 COLLEGE RD. PARANUS, NJ. 07652	DATE: 10/1/74	TIME: 10:00
VENTING DISC. (FOR BUBBLELESS BOTTLE)	DATE: 10/1/74	TIME: 10:00
MAT'L: SILICONE	DATE: 10/1/74	TIME: 10:00

# EXHIBIT A

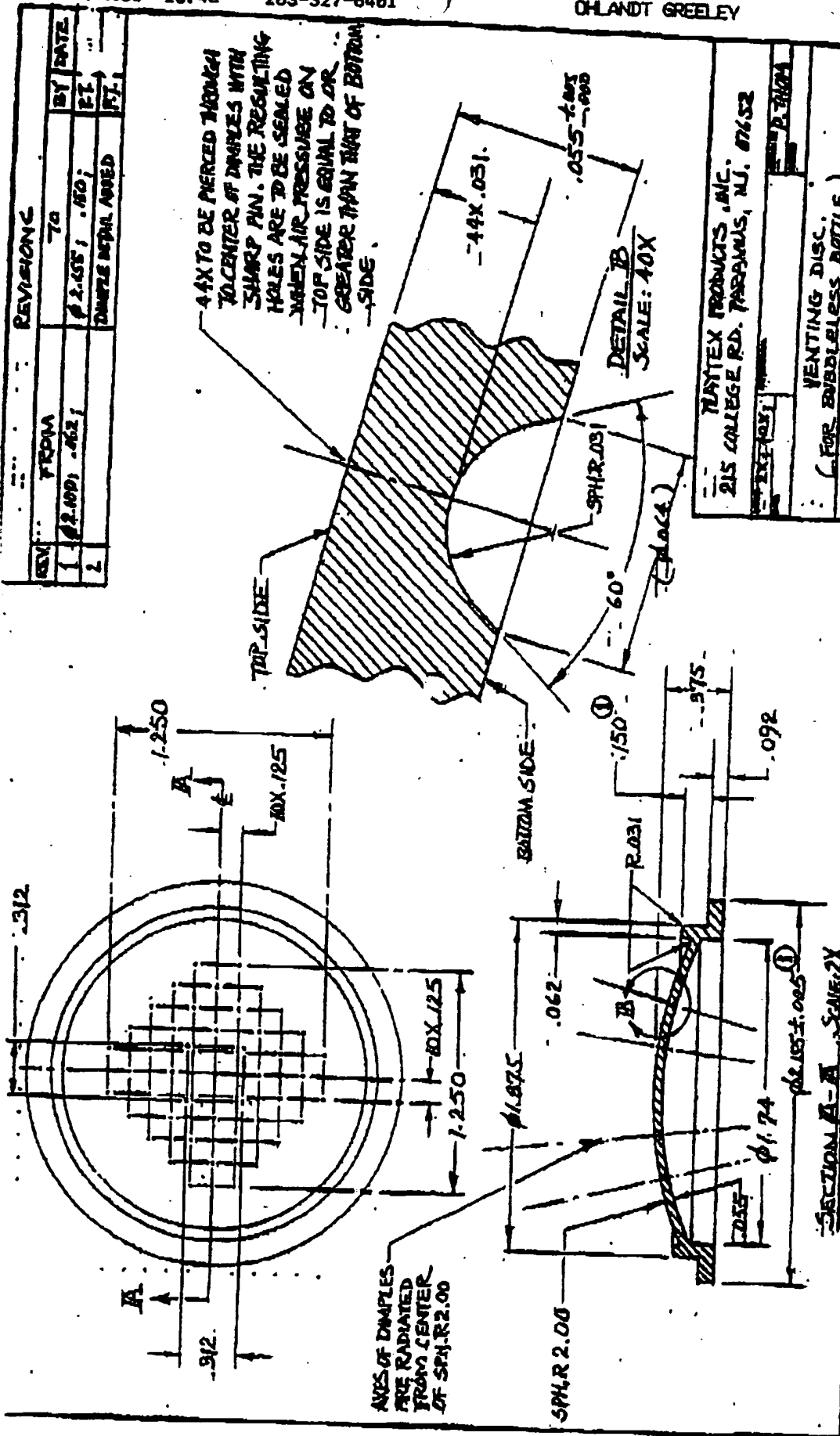


EXHIBIT B

FIG. 18

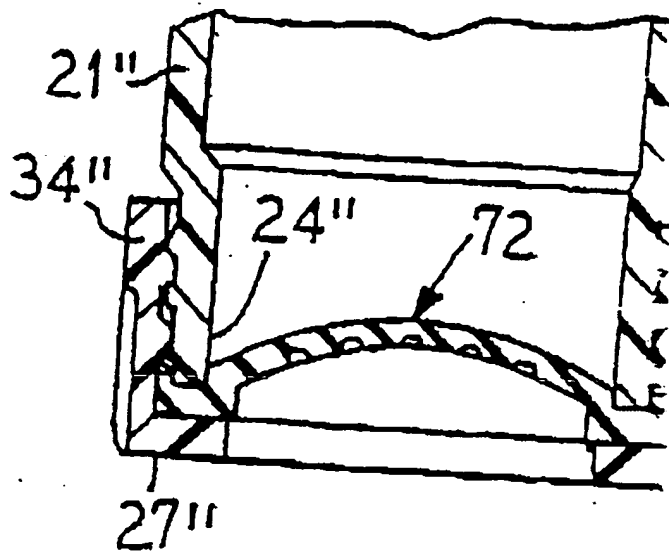


FIG. 17

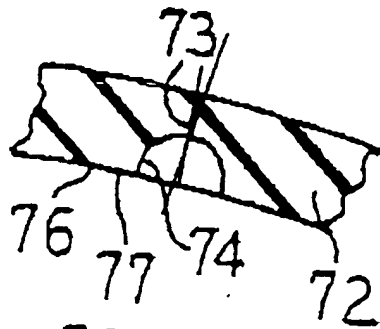


FIG. 19

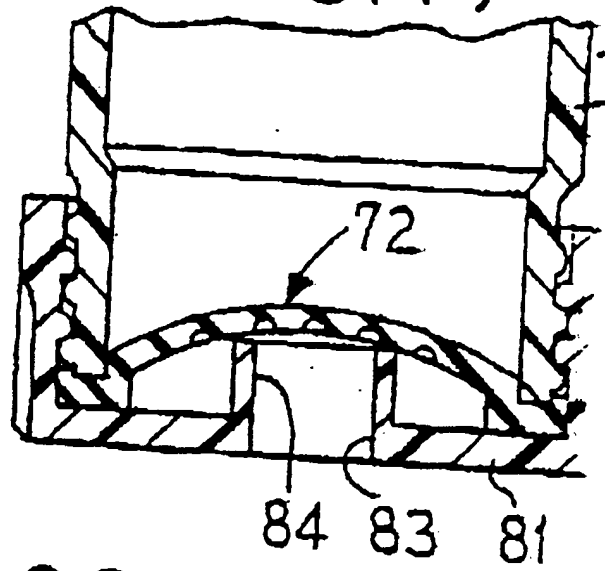


FIG. 20

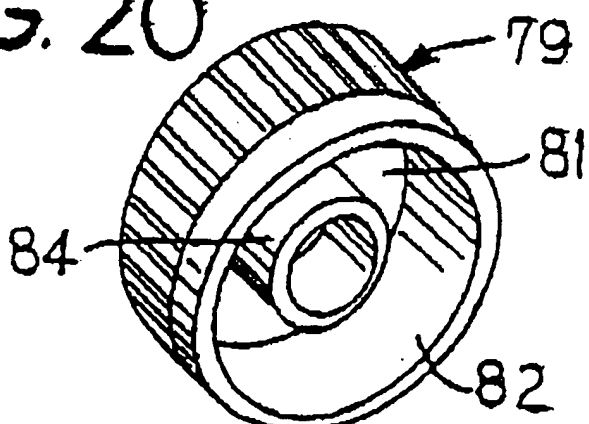


FIG. 21

FIG. 15

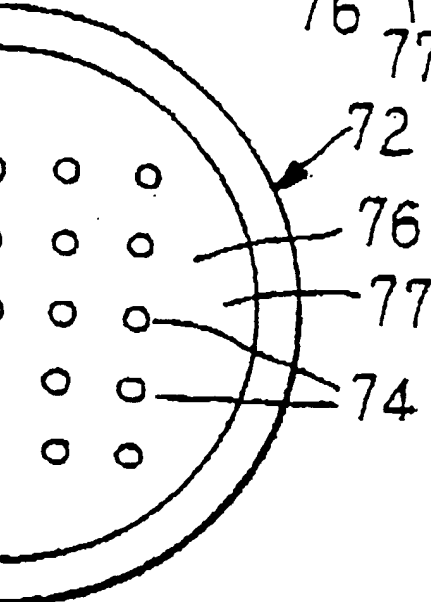


FIG. 16

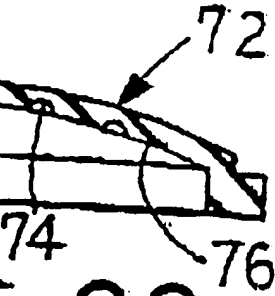


FIG. 22



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